

**Summative Evaluation of the
Basic Education Consolidation
Project**

D.O. #8

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EXECUTIVE ABSTRACT

Synopsis. The goal of the Ministry of Education and the Basic Education Consolidation (BEC) project is to plan, develop, implement, and evaluate an integrated and articulated ten-year basic education curriculum. Achieving this goal will result in an effective instructional delivery and monitoring *system* that is characterized by:

- An improved primary and junior secondary curriculum;
- Better-prepared teachers to teach the improved curriculum;
- An implemented criterion-referenced testing and continuous assessment system: and
- Useful feedback that provides student achievement information to various stakeholders.

The evaluation team concludes that solid and substantial steps toward attaining these objectives has been achieved. Progress is evidenced by new institutional processes and structures set in place by the Curriculum Development Division (CDD), the Examinations, Research and Testing Division (ERTD), and the Teacher Training and Development Department (TT&D). These enabling processes and structures lay the groundwork for sustainable long-term educational change, address concerns and issues expressed in the *Report of the National Commission on Education, 1993*, and are consistent with USAID's Strategic Objective 1 and with API subtargets 1.A.1, 1.A.2, 1.B.1 and 1.B.2. (listed below).

Strategic Objective 1. Increase the level and relevance of what students learn, their receptivity to additional training, and their preparedness for further education.

Subtarget 1.A.1. Sustainable system established to plan, produce, disseminate, and evaluate a relevant, improved quality, basic education curriculum.

Subtarget 1.A.2. Sustainable system established to train new and current teachers in using the new curriculum

Subtarget 1.B.1. Sustainable system established to evaluate and improve student learning achievement, and educational system performance.

Subtarget 1.B.2. Sustainable system established to use continuous assessment of student performance for all subjects and at all grade levels.

Significant New Structures and Processes in Curriculum Development

- The new three-year junior secondary core subject syllabi to be introduced in January 1966
- World of work, gender, family life/population, HIV/AIDS, environment issues in syllabi
- A CDD "pipeline" is filled with tasks and timelines related to more syllabi and materials
- High-level interdepartmental committees provide direction and advice to CDD
- The *Curriculum Blueprint* explains MOE policy for curriculum development and dissemination

- Six consultancy reports enlighten CDD's curriculum decision and evaluation processes

Significant New Structures and Processes in Teacher Training

- A comprehensive Management Manual for the Teacher Training Colleges was produced
- A Diploma in Primary Education Program operating at one TTI will be implemented in others
- There is a computer literate headquarters and College of Education staff.
- Plans for an Evaluation and Management Network among institutions and the TT&D are set
- A teacher training curriculum tied to revisions/innovations in the school program
- BEC has contributed to a comprehensive overall teacher training policy for Botswana

Significant New Structures in Student Assessment

- A criterion-referenced Primary School Leaving Examination will be administered in 1966
- Specifications for 1996 PSLE processing and reporting will be written by BEC close-out
- ERTD, CDD, and TT&D form the Criterion-Referenced Testing Implementation Committee (CRTIC)
- CRTIC designed a Criterion-Referenced Testing (CRT) training program in 41 pilot schools
- CRTIC completed CRT training of 80 Regional Trainers who trained all Standard 5 teachers
- A feasible CRT National Training Program for all primary teachers was developed by CRTIC

BEC is one side of a BEC/MOE partnership, where goals and procedures were largely initiated, developed, and implemented by the MOE. BEC provided technical assistance to facilitate MOE's achievement of its improvement targets. Two BEC advisors were assigned to CDD, two to TT&D, and one to ERTD.

USAID's scope of work for the evaluation team listed six project goals and fifteen evaluation tasks. Tasks are classified into six categories: (1) curriculum development, (2) teacher training, (3) student assessment, (4) project-related outputs, (5) MOE staff development, and (5) institutional change/sustainability. BEC's more detailed objectives are found in several documents, notably the BEC Project Paper, the Project Grant Agreement between Botswana and the United States, the contract between USAID and the Academy for Educational Development, advisors' job descriptions contained in the AED contract, the Report of the Needs Assessment for BEC Consolidation in Botswana, and the advisors' workplans.

Two of the three evaluation team members have been long-term advisors in Botswana, the third has consulted there. Methods to gather information included interviews, one-on-one and group

discussions, site visits, focus group sessions, standing committee meetings, and review of raw information gathered in special studies. Information sources extended beyond BEC and MOE to include professionals at the University of Botswana and in Primary Teacher Training Colleges, in Colleges of Education, and in other MOE units.

Curriculum Development Activities

Evaluation is to: (1) assess the extent and type of curriculum development activities to produce the revised basic education performance system in each subject area, and (2) assess the extent and type of curriculum infusion of emerging issues such as AIDS awareness, environmental education, gender issues, and the world of work.

CDD is one of four divisions in the Department of Curriculum Development and Evaluation. CDD has four sections: program development, planning and evaluation, material production, and management-administration. The BEC advisors are Dr Jerald Reece and Mr Barry Vogeli.

CDD's development of the new three-year junior secondary syllabi is an outstanding attainment. Syllabi are completed for six core subjects and one optional subject to be introduced in the schools in 1996. CDD's accomplishment is the centerpiece for curriculum-teaching-assessment consolidation. BEC input support in the form of advice, training, computer equipment and materials production played a major assistance role in syllabi development.

The syllabi are well-organized. Each includes a rationale for the subject, overall aims of the ten year program, aims of the subject syllabus, student assessment details, and instructional time allocation (periods per week). Syllabi are organized by school terms (three each year) and by year (three years). Content is structured by modules, by units within modules, and by topics. General and specific instructional objectives are stated.

The syllabi treat the special topics of population/family life education, environmental issues, HIV/AIDS awareness, the world of work, and gender sensitivity. CDD distinguishes between the infusion and the integration of special topics. Infusion includes the knowledge and skills required to be a natural part of the subject content, while integration requires the teaching of a given concept as a separate topic within a subject.

CDD's scheduled workplan includes completion of remaining subject syllabi in the three-year JC program as well as the writing or procurement of textbooks, teachers' guides, and student materials. The Division of Guidance and Counseling has also developed a draft program outline for the primary, junior secondary and senior secondary schools which incorporates content and activities related to the special topics mentioned above, except for environmental education.

Quality control characterizes CDD's curriculum development method. This is established through a number of procedural documents and oversight/advisory groups. Important documents include the *Curriculum Development Procedures Manual* and its supplement, *Guidelines for Developing Syllabus Content, Format, and Other Aspects Related to the Syllabus*. Another important document, *The Curriculum Blueprint: Ten Year Basic Education Programme* concisely interprets the philosophy, components, strategies, objectives, and aims of basic education.

Several task forces and committees play important advisory and oversight roles in curriculum development, implementation, and evaluation. Most were established during BEC's tenure. To illustrate, the scope of work for the Interdepartmental Task Force on the Introduction of the Three Year Junior Certificate "encompasses a broad set of planning, curricular, training, and learning issues that will affect every component of the three year JC curriculum." CDD policy mandates that each subject area must form a Subject Task Force that is advisory to CDD. Terms of reference for the Basic Education Implementation Committee specify that it is to (1) serve as a project implementation advisory body, (2) provide a forum for identifying, selecting and recommending strategies for consolidation of basic education, (3) review and evaluate the design, implementation, communication and coordination of basic education, (4) facilitate joint planning among relevant stakeholders, (5) provide a forum for information sharing, and (6) disseminate information.

BEC funded six consultancies initiated by CDD and one by Guidance and Counseling. Reports are just recently completed, so review by CDD and special task groups has so far been preliminary. The reports are: *English Language Consultant Report*. (Janet Ramsay Orr, June 1995); *Towards a Curriculum Policy for Basic Education in Botswana*. (Cream Wright, April 1995); *Subject Combinations and Time-Tabling for Basic Education in Botswana*. (Cream Wright, July 1995); *Policy Guidelines on the Implementation of Guidance and Counseling in Botswana's Education System*. (Wayne Maes, May 1995). *Towards a Computer Awareness Policy for Basic Education in Botswana* (Peter Dublin, June 1995); *The Environmental Resources Handbook* (Lois Berger: Editor).

Five CDD officers are members of the Criterion-Referenced Test Implementation Committee (CRTIC) -- this committee's work in developing CRT-based tests and continuous assessment methods are discussed in more detail under student assessment. The most important aspect of CRTIC was that CDD, TT&D, and ERTD staff joined forces to explore criterion-referenced testing and assessment with classroom teachers in 41 pilot schools. The result was a CRT training program.

CDD has two-long-term participants who received BEC-funded Master's degrees (one was also earned in Guidance and Counseling) and four short-term participants who spent a total of eleven months in study and observation tours abroad. Both BEC advisors attached to CDD did extensive on-the-job training in their respective areas of instructional materials development and curriculum development. In-house training by the BEC advisors was continual and took on added significance when 20 teachers inexperienced as curriculum writers were seconded into curriculum development roles.

Curriculum Development Conclusions

Given the relatively late start on developing the three year curriculum, the MOE-imposed tight deadline, and problems of staffing within CDD, the delivery of revised junior secondary syllabi in

time for the beginning of the 1996 school year represents an exemplary accomplishment. The syllabi are striking examples of products that signify the process of "consolidating basic education."

Systems for curriculum development which have been evolving since the founding of the CDD nearly two decades ago are being firmly established. Sound processes for curriculum development are known, practiced, evaluated and improved. The recently adopted *Curriculum Blueprint* makes a significant contribution to the system for curriculum development and dissemination in two ways: (a) by articulating the new philosophy of education, clarifying and defining critical basic education concepts, and setting out a strategy for implementation of the new basic education program and, (b) by communicating the meaning of basic education throughout the educational system.

Relevant and appropriate training for curriculum development and evaluation officers is perhaps the most urgent need of CDD. BEC made strong contributions to the training of curriculum development officers, but this may be the area hurt most by the project's early close-out. Given the level of need in the division, more staff should have received long- and short-term training.

The extent of in-house training by the curriculum advisor and the instructional materials advisor will also be sharply limited by early close-out. Given the workloads and tight deadlines during the latter months of BEC, the training of CDD personnel had to have been highly effective. The skill of the curriculum development officer responsible for materials production assures that on-the-job training in the use of the BEC-provided desk-top publishing will be sustained after the project's termination.

Teacher Training

Evaluation is to: (1) assess the extent and type of preservice and inservice teacher training curriculum revisions that occurred as a result of the changes in the basic education curriculum, and (2) assess the extent of implementation of the curriculum through preservice and inservice teacher training. Teacher training is the responsibility of the Department of Teacher Training and Development (TT&D) established in 1989. TT&D is divided into a Preservice Unit and an Inservice Unit. BEC assigned two advisors to TT&D. The Preservice Advisor is Dr Johnson Odharo; the Inservice Advisor is Dr Donna Kay LeCzel.

Preservice Activities

The Preservice Unit has training responsibilities for the three Primary Teacher Training Colleges (PTTCs) and the three Colleges of Education (COEs). The two COEs in Molepolole and Tonota train junior secondary teachers, the COE in Tlokweng is now changed from a two-year certificate granting college to a three-year diploma granting college. Within two years, the three remaining PTTCs will grant diplomas.

TT&Ds "evaluation and management system" is a well thought out procedural system that is automated as much as possible and is compatible with MOE policies and procedures. Several elements are completed and others are being developed, such as the management manual, the teacher supply and demand study, personnel databases, teacher candidate test results databases, personnel evaluation procedures and forms.

The BEC Preservice Advisor helped to modify a "self-study" process used by PTTCs periodically to assess their performance, and assisted the junior secondary Colleges of Education to introduce this exercise. He also assisted in two Teacher Demand and Supply studies, one with the Department of Primary Education at a time when it appeared that the PTTCs would certify more teachers than openings; the other as part of planning for NDP VIII. PTTC output of certified teachers reduced the number of untrained teachers by half since 1985. A *Management Manual* for the teacher training colleges was written, produced, and distributed during BEC's tenure.

Course syllabi prepared by the BEC assessment advisor for the testing, measurement, and evaluation courses offered in the preservice teacher training program at Molepolole and Tonota now contain units on criterion-referenced testing and continuous assessment. At Tlokweng, all current second and third year students have attended workshops in CRT/CA, and first year students will attend workshops this autumn. Lecturers have not started in any comprehensive way to model CRT/CA assessment in their own classes.

The BEC preservice advisor worked closely with a task force organized to monitor and advise the Tlokweng and TT&D staff as the Diploma Program's development progressed. The program is slated for introduction at the Lobatse Primary Teacher Training College with the new class of students this coming year. The diploma program will be introduced at Serowe COE and Francistown COE and the certificate program will be completely phased out.

Department heads in the PTTCs and COEs attended a computer awareness workshop at the Molepolole COE in April 1995. This was followed by a second workshop for COE lecturers who will be teaching a three-year Communication and Study Skills course that includes computer-related units. This course offered by both Colleges of Education has been revised so that it is now a three-year offering and includes several units and activities each year related to computers.

A national conference, held in May 1995 at the Molepolole College of Education, brought together nearly 500 teacher educators in Botswana; 43 papers were presented. Participants considered future directions in teacher training following 1994 publication of *Government Paper No. 2: Revised National Policy on Education*. The preservice and Inservice advisors both participated in the planning and operation of the conference.

Consultants listed below had direct impact on teacher training.

Dr Fredi Munger, University of Massachusetts, Diploma in Primary Education
Drs Judith Warren Little, University of California, Berkeley, and

Linda Pursley, Cornell University, Inservice Education
Dr P.T.M. Marope, University of Botswana, Primary School Teacher Effectiveness Study
Apple Center, Gaborone, Database Design
Dr George Urch, University of Massachusetts, DPE Evaluation
Dr Madyun, Education Center Libraries

Twelve long-term trainees enrolled in Master's Degree programs. A short-term training program was completed by six preservice TT&D staff, including the department CEO and the Acting PEO/Preservice. The program focused on the management of teacher training institutions and their improvement, was conducted in Singapore in early 1995, and was planned and facilitated by the preservice advisor.

Preservice Teacher Conclusions

At a policy level, all primary and junior secondary programs are now diploma programs, although it will take a few years to have all graduates with diplomas. Tlokweng TTC already introduced specialization; Lobatse TTC will in the coming year. College lecturers received training in all of the recent innovations and teacher training curricula have been revised to incorporate needed concepts and skills. Presentations of college lecturers at a February 1995 research conference, at the 2nd National Conference on Teacher Education and at the 1995 Boleswa Conference testifies to increased research capabilities. Advantages gained by lecturers from short- and long-term training and from in-country short courses is well documented.

Specialization may help subject-teacher ratios, but teachers are still being trained in twelve curricular areas. It is TT&D's announced intention that primary and junior secondary teacher training will take place "under one roof," but the planning process has not yet started. Improvements in localization are occurring, but Botswana lecturers still comprise only half of the COE lecturers. Preservice teacher training in 1995 shows the following products, processes, and capabilities which it did not have in 1992.

- A self-study process usable at primary/junior secondary teacher training institutions
- A *Management Manual* for the Teacher Training Colleges
- A teacher training curriculum tied to revisions/innovations in the school program
- A Diploma in Primary Education program at one institution, and slated for the rest
- A computer literate headquarters and COE staff.
- The beginnings of an Evaluation and Management network TTIs and TT&D. Preservice areas still needing attention.
- The management, monitoring and evaluation system for the entire TT&D system
- Installation and training for the increased computer capabilities at each TTC and COE
- The modeling of criterion-referenced assessment in the courses of college lecturers.
- Localization of lecturers at the teacher training institutions.

- Integration of primary and junior secondary teacher training.

Inservice Activities

The Inservice Unit is responsible for teacher training and staff development in primary, junior secondary, and senior secondary schools. Ten years ago, inservice teacher training was carried out through several MOE departments as needs arose. There are now twelve centers. With this rapid growth, inservice personnel need training, the inservice system needs consistent policy and procedures, and the program and the schools it serves need an agreed upon understanding of expected services.

Inservice teacher education has been the responsibility of TT&D's Inservice Unit since 1989. However, inservice activities continue to be delivered by a variety of departments and individuals, in some cases with little or no TT&D involvement. TT&D is making an effort to coordinate all inservice activities. During 1994, the Inservice Unit conducted 438 different inservice functions through eleven different Education Centers; 167 were primary education activities, 55 were secondary education activities, 81 were classified as other. These activities were attended by 15908 participants.

No overall system for monitoring and evaluating inservice programs exists, but several elements have been developed and are in use. The inservice advisor met with a team of Education Center directors to develop a common report writing format which is now in use. Similarly, the inservice unit developed procedures for the evaluation of each training workshop or seminar. BEC has provided computer hardware for networking centers and the headquarters office.

From May through July 1994, 817 of the 850 primary and secondary school heads participated in a three-day training program in school management. The inservice advisor served as a member of the steering committee, provided advice, helped design and conduct the training of trainers activities, and participated in the planning process. Several training sessions on various topics were conducted by the inservice advisor for Breakthrough/Project teacher advisors. This included training in clinical supervision and language acquisition, as well as informal activities involving problem solving, planning, and manual/materials production.

A national conference that brought together virtually all inservice providers in the country was held in early 1995. A national planning committee directed by the Inservice Unit PEO was assisted by the BEC inservice advisor and two BEC consultants.

A four month training/technical assistance consultancy in library maintenance was provided from April-July 1995. This served as a catalyst to spur greater cooperation among the Education Centers, the Botswana National Library Service, and the University of Botswana. One week's training was provided at each of the 11 Centers in operation at that time. Training included basic library maintenance skills, collection enhancement, and development of skills and abilities to meet site-specific problems.

From May through June 1995, six educators, including the PEO/Inservice, participated in a short-term training program sponsored by the BEC project. The study tour of several United Kingdom institutions had as its main focus the use of distance learning options and the provision of credit bearing incentives for inservice program and activities. Although little came of it during the project, it now appears that arrangements, started as a result of the study tours, provides an opportunity to pilot a training effort that awards university credit for completing a series modules.

Inservice Conclusions

Inservice providers, previously housed in a number of settings and Ministry departments are now not only under TT&D but will soon be jointly housed, both primary and secondary, in the Education Centers. The number and complexity of inservice activities over the last year documents the strengthening of inservice quality. Education Centers are improved through more responsive service, better trained personnel, better instructional resources, and extensive plans for increased service.

Staff development is a goal pursued by the unit which has prepared some groundwork, and has plans which the department and unit are pursuing.

Significant positive outcomes are shown by:

- The number, nature and extent of current inservice offerings.
- The success achieved in moving toward combined inservice regions and Education Centers
- The level of consultation and collaboration with other MOE departments
- The upgraded activities of inservice providers
- The development of an overall inservice training policy for the country.
- Plans to move toward school-based staff development as part of an overall country plan.
- The increased percentage of Batswana educators serving as secondary inservice officers.

Inservice areas still needing attention

- Incentives for involvement in inservice training are needed.
- Inservice programs using a cascade model must also provide training for training
- The Inservice Unit is understaffed for all the inservice needs that it is attempting to fill.
- Efforts toward school-based staff development need to be pursued.
- Planning for CRT/CA training, already started to some degree, must be intensified.
- Inservice is needed within TT & D's own agencies and personnel; the TT & D, TTC and COE personnel need a staff development plan and program.

Student Assessment Activities

Evaluation is to: (1) assess the implementation process (and progress) in replacing the norm-referenced (NRT) basis for the construction of certification examinations with a criterion-

referenced (CRT) basis for measurement, and (2) assess the effectiveness of implementing test blueprinting for PSLE subjects, of developing performance standards to assign marks for PSLE achievement, and of a system for analyzing the results of CRT-developed tests. Criterion-referenced testing is a way (a technology) to align tests with the curriculum so that scores are directly interpretable in terms of achieved learning targets or performance tasks.

A CRT-based student assessment system is to be implemented so that certification test scores and continuous assessment measures can provide meaningful information to a variety of users and stakeholders. CRT implementation is the job of the Examinations, Research and Testing Division (ERTD). ERTD staff are able and experienced in measurement and testing. They know how to establish procedures that create a CRT basis for interpreting test scores and continuous assessment measures. There are two ERTD program efforts in CRT implementation: (1) procedures have to be implemented to develop CRT-based certification tests, which requires close coordination between CDD and ERTD; (2) a large-scale training program is needed to strengthen the continuous assessment practices of teachers, which requires close coordination between ERTD and TT&D.

Development of a CRT-Based Teacher Training Program

Development and implementation of a CRT plan for training primary school teachers started with the formation in 1992, before BEC arrived, of a very productive working group called the Criterion Referenced Testing Implementation Committee (CRTIC). Its membership is nine ERTD officers, five CDD officers, three TT&D officers, one officer from Primary Education, and one from EPD. CRTIC developed a CRT training and implementation pilot project involving 41 primary schools. The purposes of data collection in the 41 pilot schools were to obtain feedback on the progress of CRT implementation, to identify problems in implementing CRT procedures, and to provide help to teachers. Dr Kofi Quansah, the BEC educational measurement advisor, meets with the committee. The largest representation on the committee is ERTD's, and its staff serve as Chair and Secretary.

In late 1994, CRTIC launched an ambitious plan to train all primary teachers in CRT-based assessment methods. CRTIC first trained 80 Regional Trainers who in turn trained all Standard 5 teachers (N=1567) and most primary headteachers (N=406). The second phase began with the training of 80 TT&D trainers in the CRT approach. The 80 TT&D trainers are now to begin training approximately 700 school-based "Resource Persons" (one to a primary school) whose job it will be to help fellow teachers in each school learn about and apply the CRT approach to their assessment practices. TT&D's training of Resource Persons will start in September 1995 and is expected to be completed by March 1996. Resource Persons are the key to training all primary teachers. CRTIC will monitor the program.

Development of a CRT-Based Certification Testing Program.

Test blueprints for the five subjects in the Primary School Leaving Examinations are ready for CDD approvals. The development of test plans describing characteristics of the 1996 PSLE and its administration and scoring was partly finished by ERTD and CDD in March 1995. All five subjects will have a 60-item multiple choice test; and Setswana and English will administer an essay examination. About 40,000 examinees will sit the 1996 trial CRT-based PSLE.

An established procedure will be used for standard setting to determine cutscores for marks. ERTD staff participated in these sorts of exercises in the JSEIP period. Standard setting for the 1996 trial PSLE needs to be done before 1996 PSLE test papers are scanned and computer processed. In preparation for the item banking system, the classification of the test items generated at the May 1995 workshop has started. Work is well underway in preparing the 1996 CRT-based PSLE.

There have been three short-term consultants with the assessment component so far. A fourth will be Dr Richard Johnson, who will work primarily with ERTD staff but also consult with professional staff of the Government Computer Bureau (GCB) to develop specifications for a single generalized and integrated scoring and reporting system customized for ERTD. Special processing and reporting programs are essential for preparing CRT-based reports to different stakeholder groups.

Four ERTD staff are or have studied under the BEC long-term participant training program. Three enrolled in Masters Degree programs at the University of Pittsburgh, and one completed a six-month course at Florida State University. All programs are in educational measurement.

Study visits to the Kenya National Examinations Council and the West African Examinations Council were sponsored by BEC in 1994. Two ERTD staff visited each site.

Student Assessment Conclusions

ERTD and CRTIC initiatives made significant progress along two broad program fronts. These were (1) development of a CRT-based teacher training program and (2) development of a CRT-based certification testing program. All Standard 5 teachers and nearly all primary school headteachers have had CRT orientation training. The "multiplier effect" training plan, applied by CRTIC and adopted by TT&D, will train approximately 700 Resource Persons (one per primary school), will start next month, and by mid-1996 bring first-phase CRT training to all primary teachers. CRTIC is an impressive working committee.

CRT-based certification testing started with work on the PSLE. Choosing the PSLE was a prudent decision because it no longer is a "high stakes" examination. Minor problems can be tolerated which would not be the case with the Junior Certificate Examination (JCE). PSLE test blueprints are nearly ready for CDD approval. An item writing workshop produced approximately 950 potential PSLE test items for review and editing. Mrs Moahi, with strong backing from the USAID Project Manager and BEC's Chief of Party, has taken steps to insure

that an entirely new computerized test scoring and reporting operation will be in place for the 1966 trial CRT-based PSLE. Computers, software, and production equipment that ERTD is receiving from BEC will be effectively used by staff who are very proficient in the use of word processing and graphics programs. Substantial system change in testing and assessment will start in 1966.

Sustainability

In a support contract like BEC, sustainability implies that after BEC leaves, MOE goals and agenda will retain BEC-introduced influences. To the extent that BEC provided feasible and helpful suggestions, created needed products, introduced better procedures, or refined ideas, then these are the ideas and activities that facilitate programmatic sustainability.

Minor changes are probably never sustainable because they are temporary and easily replaced or discarded. Moderate changes may be sustainable or not to the extent that they have significance to an organization as it acquires greater experience and capacity (the CRT concept comes to mind where CRT quietly surfaced in JSEIP and then became a major theme in BEC). When an organization and its components (e.g., MOE and its CDD, TT&D, and ERTD) wishes to establish a *system* where components must interact and depend on each other to achieve their separate objectives, then project support has a far better opportunity to facilitate sustainability. This is because when an organization is sophisticated enough to develop a system, the one it builds is undoubtedly intended to last for some time, parts of the system are "owned" by the components of the organization, and a great deal of time and careful thinking was invested in planning the framework of the intended system.

This describes conditions that led to BEC. The MOE and BEC were to create a better system of instructional delivery. This is done by developing interdependent activities and outputs among CDD, ERTD, and TT&D. These three organizational units are implementing processes and structures of an educational system that will operate more efficiently when the curriculum is revised, teacher training is strengthened, and student assessment provides useful feedback about student performance. CDD's curriculum informs teachers what to teach and ERTD what to test. TT&D collaborates with CDD to prepare teachers to teach the curriculum, ERTD constructs CRT-based tests whose performance results serve the information needs of CDD and TT&D. When details of student achievement are brought to light by good CRT-based testing, strengths and weaknesses in system delivery can be diagnosed and steps taken to improve the situation. CDD, TT&D, and ERTD then become part of a consolidated educational improvement process.

Sustainability in the BEC context is evidenced in activities related to MOE/BEC objectives or activities that continue after BEC leaves. *Sustainability for BEC means continued consolidation.* Twelve predictable activities that will exemplify sustainability are:

- ERTD, CDD, and TT&D develop a CRT-based JCE along the lines set down with the PSLE
- CDD, ERTD, and TT&D collaborate on the implementation of program evaluation

procedures

- TT&D, CDD, and ERTD work to strengthen continuous assessment through Resource Persons
- ERTD installs a CRT computer processing and reporting system for 1966
- Long-term trainees return to their posts and apply high level knowledge and skills
- Expanded use of computers for test preparation and in-house analysis of test results
- CRTIC oversight is continued for further development of continuous assessment methods'
- TT&D conducts the CRTIC monitored CRT-based training program for all teachers
- Subject task force groups routinely review certification test results
- Formal institution-based staff development established at teacher training colleges
- University of Botswana lecturers involved in the curricular changes taking place in schools
- Distance learning and credit-bearing incentives provided for inservice teacher training

Lessons Learned

The lessons to be learned from this evaluation of the BEC project are simple and few. These lessons are probably characteristic to some degree of all project evaluations. There is no intention here to criticize either USAID or BEC since this project is a good one -- all BEC staff were high-level experienced professionals. MOE staff are experienced and competent. Things to be done were clear to MOE and things were done right technically. Positive sustainability is predictable because the MOE had its objectives for system change in mind and BEC staff developed needs assessments and project objectives that supported those of the MOE.

It is of some value to consider this evaluation as a mid-project assessment. If the project had not closed out early, that would be true, and it would be clear that the MOE/BEC was on a correct course for consolidated system change. Substantial enabling processes and structures have been set in place by CDD, TT&D, and ERTD. Next year will begin to show the collective impact of these processes and structures. In 1996, the new three-year junior secondary curriculum will be introduced; the first CRT-based certification tests will be administered, processed, and reported; and TT&D will have completed first wave training for all primary school teachers. If this were a mid-project formative evaluation, then the recommendations listed in the next chapter may have greater bite. They are offered with a positive spirit but they probably reflect where future consolidation activities can be expected to take place.

Lessons Learned

- Project managers need periodic formative evaluations. Summative evaluations often turn out to be post mortem analyses of why things went wrong or irrelevant seals of approval.
- There needs to be informative interaction between MOE, contractor staff, and USAID. USAID was not kept clearly informed about the nature of work going on or the quality of staff support given. This was largely the result of not having periodic formative evaluations. Reference group meetings are never enough. Day-to-day informal talk is needed. These often involve clarifying technical issues and solving misunderstandings. MOE and relevant BEC advisors should meet informally and on an as-needed basis with the USAID Project Manager. The notion that the COP alone deals with USAID is clearly inappropriate for a BEC-like project. No one person has that much technical ability.
- In a project like BEC, all short-term consultancies must serve identified and expressed needs of MOE units. There was an "endspurt" of consultancies on the BEC project. Some of these appear to be shaky, some not at all. And even a bad consultancy may point to wrong directions and cause revisions of plans. However, that is an expensive lesson. In a project like BEC, short-term consultation must start with clear dialogue between MOE unit managers and BEC technical advisors.
- As in most projects, public relations and information dissemination activities are often limited while development work is planned and implementation is started. When a system

change as extensive as this one is taking place, the public and especially the staff and professionals in the system must be informed early about changes that will affect them and their lives. If this is not started early, confusion results and anxieties grow which can impede success. To illustrate, CRT is a simple concept, yet teachers and even teacher trainers appear confused about it.

List of Acronyms

AED	Academy for Educational Development
AID	Agency for International Development
API	Assessment of Project Impact
BEC	Basic Education Consolidation Project
BIAC	Botswana Institute for Administration and Commerce
CA	Continuous Assessment
CDE	Curriculum Development and Evaluation
CDD	Curriculum Development Division
CDO	Curriculum Development Officer
CEO	Chief Education Officer
COE	College of Education
CON	USAID/AED Contract
COP	Chief of Party
CRT	Criterion-referenced Testing
CRTIC	Criterion-referenced Testing Implementation Committee
DPE	Diploma in Primary Education
DPE	Department of Primary Education
DPSM	Department of Personnel Services Management
DSE	Department of Secondary Education
EO	Education Officer
ERG	Evaluation Reference Group
ERTD	Examinations, Research and Testing Division
FEO	Field Education Officer
FTTC	Francistown Teacher Training College
GC/GCO	Guidance and Counseling Officer
GOB	Government of Botswana
GSO	General Services Officer
HOD	Heads of Department
HRDO	Human Resource Development Officer

JC/JCE	Junior Certificate/Junior Certificate Examination
JD	Job Description
JMB	Joint Matriculation Board
JSEIP	Junior Secondary Education Improvement Project
JSLE	Junior Secondary Leaving Examination
KNEC	Kenya National Examinations Council
LTTC	Lobatse Teacher Training College
MCE	Molepolole College of Education
MFDP	Ministry of Finance and Development Planning
MOE	Ministry of Education
NCE	National Commission on Education
NCTE	National Council of Teacher Education
NDP	National Development Planning
NRT	Norm Referenced Testing
ODA	Overseas Development Administration
P	Pula
PAC	Policy Advisory Board
PDO	Project Development Officer
PEIP	Primary Education Improvement Project
PEO	Education Officer
PGA	Project Grant Agreement
PIL	Project Implement Letter
PIO	Project Implementation Order
PP	Project Paper
PSC	Personal Services Contract
PSLE	Primary School Leaving Examination
PY	Project Year
REO	Regional Education Officer
RNPE	Revised National Policy on Education
RTA	Resident Technical Advisor
RTC	Research and Testing Center

SEO	Senior Education Officer
STTC	Serowe Teacher Training College
SY	Subject Year
TA	Technical Assistance
TSM	Teaching Services Management
TCE	Tonota College of Education
TTC	Teacher Training College
TTD	Department of Teacher Training and Development
UB	University of Botswana
UB-INSET	University of Botswana Inservice Education of Teachers
UCLES	University of Cambridge Examinations Syndicate
WAEC	West Africa Examinations Council

CHAPTER 1. BACKGROUND

This is the summative evaluation report for the Basic Education Consolidation Project (BEC) in Botswana. BEC's central goal is to assist the Ministry of Education (MOE) to plan, develop, implement, and evaluate an integrated and articulated nine-year (now ten-year) basic education curriculum. BEC signifies a shared MOE/BEC partnership with goals, tasks and programmatic efforts largely initiated, developed, and implemented by the Ministry of Education. BEC staff provide professional assistance and support to facilitate the Ministry's achievement of institutional targets. The collaborative role of BEC was a theme emphasized to the evaluation team not only by USAID/Gaborone but also by BEC project staff.

Context Considerations

The setting for the implementation of the Basic Education Consolidation project (BEC) is one of on-going, rapid and substantial change in the Botswana society, dating at least to the time of Independence in 1966. The first National Commission on Education and the subsequent White Paper (1977) charted the course of educational development for 16 years, a period in which access to education at all levels was greatly increased. Quality of educational opportunity was an equal concern of Government, leading, among other things, to two major USAID-assisted projects: the Primary Education Improvement Project (PEIP, 1981-1991) with a goal of improving the primary teacher training system, and the Junior Secondary Education Improvement Project (JSEIP, 1985-1992) which focused primarily on curriculum development for the rapidly expanding junior secondary schools. BEC, as its name suggests, represented a USAID development effort to assist the Ministry of Education (MOE) in its goal to create a nine-year (now ten-year) year unified system of basic education in the country, bringing together the primary (Standards 1-7) and the junior secondary (Forms 1, 2) education programs which had evolved over time to an unacceptable extent as separate entities.

Assistance was targeted through BEC to three aspects of basic education which are critical to the creation of a consolidated system of basic education:

- The development and dissemination of new or revised curricula for the basic education program and, concurrently, the further development and refinement of the processes for curriculum development.
- The training of teachers who could deliver the new curriculum to students in the basic education program utilizing appropriate instructional technologies.
- The assessment and reporting of student learning which would inform students, teachers and parents of performance achievement and which would also inform on-going curriculum revision and teacher education processes.

Influences on BEC

Note should be taken at the outset of a number of significant factors which in one way or another probably influenced to some extent outputs of the BEC project. No attempt was made by the team to make judgments about these circumstances.

The Late Start for the Project. The tentative time-table presented in the Project Paper proposed the arrival of the BEC technical assistance team in November 1991, a month before the departures of the PEIP and JSEIP teams and just over a year before the BEC project actually got underway with arrival of the Chief-of-Party in December 1992. This, of course, created a ripple effect in which the three MOE divisions participating in BEC were without the long-term technical assistance for a year, but of greatest importance is the possibility that truncation would not have occurred because of the stage of the project.

The Project Truncation. As noted earlier, the potential BEC impact, as reflected in long-term technical assistance, could be said to have been reduced by one-third and other inputs reduced accordingly. BEC terminates 30 September 1995 after having completed three years of its intended four and one-half year life. The announcement of the early closeout came a few months after the completion of an extensive needs assessment and preparation of long-term work plans by the BEC technical assistance team. Immediately, new work plans had to be formulated, based on the reduced time-frame and modified priorities.

Delay in Identifying and Placing Long-and Short-Term Participants. While over four-fifths of the allotted person-years of long-term training was used, earlier departures would have provided for participants' earlier return, thus increasing assistance to the goals of BEC by available highly trained personnel. An earlier start would also have assured, no doubt, that more than one-third of available short-term training would be used.

Consultancies Clustered Near the End of the BEC Project. The timing of most of the consultancies was such that the reports were not received in time for careful analysis during the life of the project or were not received before BEC's termination. The reports, however, will undoubtedly be useful in the future to the divisions involved with basic education.

The NCE and the RNPE. The establishment of the Second National Commission on Education was authorized in the Seventh National Development Plan (1991-1996) and became operational in June 1992. The work of the Commission was carried out over a 12-month period, culminating in a published report in June 1993.

The work of the Second National Commission on Education through the release of the Revised National Policy on Education covered the period from June 1992 through March 1994. It was apparent from the Commission's deliberations and report that significant policy changes would be forthcoming. While the MOE divisions involved with BEC's implementation were obviously fully engaged with relevant tasks during this period, it can also be described as "a time of waiting" for decisions concerning major policy shifts which were under consideration. _The Revised Policy on Education contained a major change having implications for the BEC project in that it extended the junior secondary education program from two to three years, thus creating a 10-year basic education program. Junior secondary curriculum development work, which had been proceeding on the basis of a two-year program, had to be modified to include the third year. That change, combined with the decision to implement the revised three-year curriculum in January, 1996 created a highly demanding workload for curriculum development officers in a division which was greatly understaffed.

The Needs Assessment Process. There seems to be unanimous agreement that conducting a needs assessment at the outset of BEC was a sound idea and beneficial to the project, a point of view shared by the evaluation team. However, it must be noted that the process, which included long-term work plans for all technical assistants, required over eight months to complete which was nearly one-fourth of the shortened BEC life. While BEC project purpose and goals have apparently not been amended as a result of the truncation, expected project outputs as reflected in the revised and approved workplans have been significantly reduced. The purpose of the BEC/MOE needs assessment was to bring together a broadly based stakeholder group to identify the needs related to the development of a consolidated basic education program and to establish a consensus about the priorities which should be undertaken within the framework of the stated BEC purposes and goals. The needs assessment, although lengthy, seemed to work well and resulted in more sharply focused long-term work plans which were approved by the MOE and USAID. It should be noted in view of the early project closeout that approval of the needs assessment and workplans occurred about nine months after the project start-up.

Staffing of the CDD. Difficulty in filling vacant posts was common to most divisions and has a long history. Staffing problems in the CDD involved the loss of experienced curriculum developers and continuing difficulty in filling vacancies, several of which are long-standing. In order to deal with this problem, 20 secondary teachers and field officers most of whom were inexperienced in curriculum development, were seconded to CDD to assist with the development of the JC syllabi.

Project Management. Two other contextual factors are worthy of note in the summative evaluation process. With the arrival on post of the closeout administrator in mid-March 1995, the responsibilities of the COP shifted primarily to guidance and counseling; however, from April 17 through May 31, 1995, the COP was on sick leave. He departed from post on 23 July 1995. It is also worth noting that there were three USAID Project Officers responsible for BEC during the period encompassing the project's inception through early closeout, the same number that served PEIP over a twelve-year period.

EVALUATION PURPOSES AND SPECIFIC OBJECTIVES

The broad purposes of the evaluation are (1) to assess the validity and relevance of the project design and its assumptions, (2) to review progress toward stated objectives, and (3) to assess the sustainability of project impact. The focus of the evaluation is guided by goals and tasks identified in the scope of work prepared by the United States Agency for International Development (USAID/Gaborone) who contracted the evaluation. It addresses six components of the project. Goals and tasks for each are found below.

Curriculum Development

Goal 1. Enhance the capability of the established system to plan, produce, disseminate, and evaluate a relevant, higher quality, ten-year, basic education program.

Task 2. To assess the extent and type of curriculum development activities to produce the revised basic education performance curriculum in each subject area.

Task 3. To assess the extent and type of curriculum infusion of special topics such as AIDS awareness, environmental education, gender issues, and the world of work and energy issues.

Teacher Training

Goal 2. Improve the quality of curriculum and instruction offered to primary and junior secondary students throughout Botswana.

Task 4. To assess the extent the implementation of the curriculum through pre-service teacher education and in-service teacher training.

Goal 4. Improve the quality of the established teacher training system to prepare new and current teachers in using the new curriculum.

Task 8. To assess the extent and type of pre-service and in-service teacher training curriculum revisions that resulted from changes in the basic education curriculum.

Student Learning Assessment

Goal 3. Establish an assessment system that provides feedback on student learning achievement to pupils, teachers, parents, policy makers, and the public service.

Task 10. To assess the implementation process (and progress) in replacing the norm-referenced (NRT) basis for the construction of Primary School Leaving Examinations and Junior Certificate Examinations with a Criterion-Referenced (CRT) basis for measurement.

Goal 5. Establish and monitor student performance using criterion referenced testing (CRT) and school-based continuous assessment.

Task 11. To assess the effectiveness of implementing test blueprinting for PSLE subjects, of developing performance standards to assign marks for PSLE achievement, and of a system for analyzing the results of CRT-developed tests.

MOE Staff Development

Goal 6. Strengthen the educational service capacity of the MOE through short- and long-term training.

Task 6. To assess the extent and type of in-house staff training provided to EOs by BEC advisors and consultants, and the effectiveness of the EOs in implementing their training..

Task 7. To assess short-term and long-term training, both in-country and international, and the appropriateness of this training for the positions held.

Task 14. To assess the impact of short-term and long-term training (in-

country and international) on EO job performance.

Project-Related Outputs

Task 5. To assess the proficiency of Education Officers (EOs) in the use of project-provided commodities such as computer and video equipment, photocopiers, and books in the production of curriculum materials.

Task 12. To assess the functioning of standing committees to guide the implementation of the BEC project. These committees include the BEC steering committee (reference group), the Participant Training Committee, and the Basic Education Implementation Committee.

Task 13. To assess the effectiveness of relevant publications and reports connected with BEC, their distribution, acceptance, and use by intended audiences.

Institutional Change and Sustainability

Task 1. To assess the effectiveness of policy and institutional development procedures instituted withing the Curriculum Development and Evaluation (CD&E) and Teacher Training and Development (TT&D) departments.

Task 9. To assess the extent of MOE's implementation of project consultant's recommendations.

Task 15. To assess the sustainability of BEC outputs in the light of the early project close-out

METHODS AND PROCEDURES

The evaluation is summative since BEC is closing out in late September 1995. Evidence is assembled by the evaluation team to describe and document what activities were carried out, what processes were established, and what products resulted in terms of curriculum development, teacher training, and student learning assessment. USAID asks the simple questions: What was accomplished in terms of specific objectives? Was the project sound and supportive? Did project objectives assist MOE to accomplish intended and implemented changes? Are these implemented changes likely to have long term significant consequences ?

The evaluation team wants to emphasize a most important point. Activities described and discussed in the report are recognized to be Ministry of Education initiatives carried out by Ministry staff; BEC staff served in advisory and supportive roles. Although BEC Advisors under terms of their contracts developed individual workplans and listed individual workplan objectives, these objectives had to be tailored to the Ministry's organizational workscope and timelines. The accomplishment of these objectives was achieved by Ministry staff with BEC staff support. We want this point to be clearly established in the report.

Information Collection and Interim Review. The evaluation team represents persons with experience in teacher training, curriculum development, and testing and measurement. Two are previous long-term advisors in Botswana with PEIP and JSEIP. The third has had consultative experience in Botswana as well as in several other countries.

Team members want to learn about the status of activities related to BEC- supported objectives, how resources and materials that now exist through project assistance may facilitate future directions, what factors may have either helped or hindered the achievement of project targets and objectives. Discussions with Botswana staff and BEC counterparts are invaluable in framing questions and interpreting findings. In this sense, this is a participatory evaluation.

Answers are found through a variety of customary information gathering methods that include document review (at USAID, within the BEC project, and within MOE departments), interviews, one-on-one discussions, site visits as needed, focus group sessions where discussion of issues may be stimulated, standing committee meetings with MOE and BEC staff, and review of raw information gathered in special studies. Meetings also extend beyond BEC, TTD and CD&E to include professionals at the University of Botswana (UB) and in Primary Teacher Training Colleges (PTTCs), in Colleges of Education (CoEs), and in other MOE departments.

Review by the Evaluation Reference Group (ERG) occurs three times during the five-week evaluation schedule. The ERG is constituted by USAID and GOB/MOE. It meets at the end of the first week to review and provide a go-ahead for the evaluation workscope, at the end of the third week to review progress toward accomplishment of the workscope, and in the middle of the fifth week to obtain feedback on the first draft of the nearly-completed evaluation report that will include findings, conclusions, and suggestions that may be of use to the departments.

Team Members' Areas of Main Responsibility. Team members each have a main area of responsibility – curriculum development, teacher training, or the assessment of student learning. The matrix below identifies the team member with main responsibility for each project component.

◦ Curriculum Development	Dr Max Evans
◦ Teacher Training	Dr John Hansen
◦ Student Learning Assessment	Dr John Bowers
◦ MOE Staff Development	All three
◦ Project-Related Outputs	All three
◦ Institutional Change and Sustainability	All three

PRESENTATION OF FINDINGS

Findings related the goals and tasks for each of six components spelled out in the Background Section are presented here. This will involve descriptions of major tasks and activities related to these goals and tasks, BEC-supportive workplans and activities related to the goals and task activities, and summary and evaluative conclusions for the component that discusses stronger and weaker aspects of BEC support as well as factors that may have either constrained accomplishment or facilitated project effectiveness.

CHAPTER 2: CURRICULUM AND INSTRUCTIONAL MATERIALS DEVELOPMENT

The Established System

The purpose of the Basic Education Consolidation project speaks of "enhancing the established system to plan, produce, disseminate and evaluate a relevant, improved quality, ten year basic education curriculum." A brief description of the "established system" as it relates to curriculum development in basic education is intended to provide a contextual framework for the summative evaluation, recognizing at the same time that the consolidation of basic education encompasses a much broader system than the Curriculum Development Division.

CDD is one of four divisions in the Department of Curriculum Development and Evaluation. The other are: Schools Broadcasting; Guidance and Counseling; Publications; and the Teaching Aids Production Unit. The Examinations, Research and Testing Division, formerly a unit within CD&E, is now a separate Division reporting directly MOE headquarters.

The Organization and Management Review for the Ministry of Education (April 1992) states that the overall objective of the Department of Curriculum Development and Evaluation is: (a) to carry out ongoing curriculum reform and revision and, (b) to plan for the development and production of appropriate instructional materials. The major functions of CD&E are: (a) policy coordination and leadership and, (b) curriculum development, implementation, dissemination, coordination and evaluation. The CDD now has the following sections within the Division: program development; planning and evaluation; material production; and management-administration.

The CDD (originally a "unit") was established in 1977 as an outgrowth of recommendations of the first National Commission on Education. There were four members of the Division when the current Principal Education Officer, Mrs Felicity Leburu-Sianga, joined it in 1980. Although there were references to certain curriculum responsibilities for Secondary Education in its original terms of reference, the early years of the Division were directed towards

development of the primary school curriculum and the Standard Four Attainment Test. Direct support to the Curriculum Development Unit was deliberately excluded from the design of the Primary Education Improvement Project (PEIP), whose focus was the development of the teacher training system.

In 1983 there was a marked shift in MOE policy regarding the expansion of the junior secondary school system with a corresponding shift in curriculum development from the primary area toward an integrated curriculum for nine years of basic education. The National Development Plan for the period 1985-91 (a period that also corresponds with the Junior Secondary Education Improvement Project) stated that a major revision of the junior secondary curriculum would be undertaken to provide greater continuity between primary and junior secondary schooling. The diversification of the curriculum to include art and design and technology was getting underway in 1988. Throughout this period the trialing of new and revised curriculum in selected schools and visits to the schools by curriculum development officers was established as an on-going part of the curriculum development process.

The period from 1989 to 1993 continued the focus on the Junior Secondary school program with attention being given to the adaptation of the child-centered curriculum model which had been developed for the primary schools. A rapidly increasing junior secondary school population with mixed abilities required curricular and instructional modifications. Increased attention was given to incorporating the world of work into the JC curriculum content and the population/family life program became a significant element in the curriculum development process. The first edition of the Curriculum Development Procedures Manual, which outlines the model the Division follows in the design and development of curricula and introduces the concept of curriculum as both a product and a process, was developed in 1991/92 and delivered to CDD officers in early 1993. In late 1992, the BEC project started up with the arrival of the first long-term technical assistant.

Throughout the history of the CDD, professional staffing has been a problem which includes recruitment of new staff, continuity of service of experienced staff and timely, relevant training. (Several highly experienced senior curriculum development officers have been lost in recent months to positions outside government which offer better compensation and opportunities for advancement.) Over the years, new posts have been added to the establishment roster, and they now total 24 for the professional staff. Of that number, however, only 13 are filled. In order to respond to the demands arising from the RNPE, 20 teachers and field officers were seconded to CDD for a one-year period with their work beginning in May, 1995.

Scope of Work

The Basic Education Consolidation Project(BEC) incorporated three elements directed toward the continuing improvement of the basic education system in Botswana: curriculum development, curriculum implementation (pre-service and in-service teacher training) and the assessment of student learning achievement. The Scope of Work (SOW) for BEC's summative evaluation for the curriculum area identified one project goal and two related tasks which guided the evaluation process. The goal is stated as follows: To enhance the established system

to plan, produce, disseminate and evaluate a relevant, improved quality, ten year basic education curriculum.

The tasks indicated in the SOW to be carried out in order to evaluate BEC progress toward the attainment of the goal were:

1. To assess the extent and type of curriculum development activities to produce the revised basic education performance system in each subject area.
2. To assess the extent and type of curriculum infusion of emerging issues such as AIDS awareness, environmental education, gender issues, and the world of work.

BEC's Curriculum Related Objectives, Anticipated Outputs and Project Activities

Although the broader intent of BEC's goal and purpose has remained constant since the project's inception, statements of the project's objectives, outputs and activities have evolved over time as a review of relevant source documents reveals. These documents include:

Basic Education Consolidation Project Paper, PP
September 20, 1991.

Project Grant Agreement between the PGA
Government of Botswana and the United States
of America for the Basic Education Consolidation
Project, September 23, 1992.

Contract between USAID and the Academy for CON
Educational Development (the institutional
contractor) August 20, 1992.

Job descriptions for technical advisors as JD
contained in the AED contract.

Report of the Needs Assessment for Basic NA
Education Consolidation in Botswana (including
advisor work plans) September 10, 1993.

BEC Team Close out Plans CO

USAID/Botswana Assessment of Program Impact, API
Fiscal Year 1995.

**Revised Annex 1, Project Grant Amendment AM
NO. 4, Basic Education Consolidation Project
63-0254 (approval pending).**

These statements of objectives, outputs and activities are presented below, with their sources identified, to provide a sense of both the original and the evolving conceptualizations and plans of what the project should do in order to address the goal of enhancing the established system to plan, produce, disseminate and evaluate a relevant, improved quality, ten-year basic education curriculum. The statements are categorized as follows: curriculum development and materials, process and structure and research and evaluation to be undertaken.

Curriculum Products and Materials Development

1. An integrated plan and system for curriculum development and implementation will be in place covering the first nine (now ten) years of education .(PP, CON, NA)
2. At least 16 subject years of curriculum will be produced with priority to subjects begun under JSEIP, and curricula for two subjects offered in later primary grades. (PP, CON, CO)
3. Course syllabi will be revised or developed including objectives, content, scope and sequence, recommended teaching methods, textbook and instructional materials, suggested student appraisal instruments and procedures and counseling methods and materials. (PP, CON)
4. All aspects of curriculum development will be supported from syllabus development and implementation planning through materials development, field testing, revisions, printing and distribution.(PP, CON)
5. The following curricular innovations will be integrated into the basic education curriculum (1-10): family life education and population; world of work; gender issues; and AIDS awareness. (JD, NA, CO)
6. Feasible objectives, aims and goals of basic education will be designed. (NA)
7. "Basic education" and "consolidation" will be defined and disseminated to stakeholders. (NA)
8. Revised syllabuses which include practical applications of content and skills to the world of work will be published. (NA, CO)

9. Syllabuses that are flexible in order to accommodate high/low achievers, different geographic settings, and other students will be designed. (NA)
10. Primary and junior secondary teacher training college curricula will be integrated. (NA)
11. Guidance and counseling training materials, including issues related to employment, gender, population and environmental issues will be developed. (PP)
12. Revised instructional content and methodological services in curriculum development, to meet the needs of a changing Botswana environment from pastoral to industrial, will be provided. (PGA)
13. The implementation of the aforementioned services will occur through curriculum trialing, pre-service teacher education and in-service teacher training.(PGA)

Process and Structure

1. Structural, organizational and procedural gaps, redundancies and inefficiencies will be addressed. (PP, CON)
2. Curriculum development and coordination committee will be established to serve as an advisory body. (PP,CON)
3. Process of curriculum development, testing and implementation will be refined and practiced. (PP, CON)
4. Guidance and counseling mechanism will be developed to institutionalize basic communication between MOE headquarters staff and field officers. (PP)
5. Problems of availability and distribution of curriculum materials in primary schools will be addressed. (NA)
6. A curriculum development procedures manual will be further developed; published; and used as a guide to curriculum development. (NA, CO)
7. An instructional materials prescription manual will be developed. (NA)
8. A curriculum blueprint prototype will be developed. (NA, CO)
9. Communication links will be established with training institutions. (NA)
10. Basic education curriculum coordinating committee will function as a communications and coordination link among all basic education stakeholder groups. (NA)
11. Reporting systems and procedures will be designed for curriculum assessment and

evaluation. (NA)

12. A revised philosophy of education which focuses more strongly on problem solving, innovations and the world of work will be formulated. (PGA)

Research and Evaluation

1. A detailed needs assessment and institutional strengthening plan will be conducted jointly with the MOE. (PP, CON, JD)
2. Special research and studies will be undertaken by the CDD, TT &D and USAID to provide better informed decisions regarding objectives of action plans and project implementation. (PP, CON)
3. Baseline data on performance achievement disparities will be collected by gender at primary and secondary levels, by subject matter and on occupational aspirations of students. (PP)
4. A study will be conducted on the process of disseminating curriculum materials; the extent of curriculum materials available in schools; and on implementation procedures to expedite timely dissemination. (NA)
5. Committee will be activated to review, commission and coordinate studies to identify the needs of all basic education target groups. (NA, CO)
6. Data will be collected on the extent to which limited English proficiency on the part of

students and teachers impacts examination performance and the ability to obtain and maintain employment. (NA)

The summative evaluation process has sought to compile information regarding the extent to which the above stated objectives and outcomes were achieved and related activities were undertaken.

USAID/BEC Inputs Into Curriculum Development

Because of truncation, BEC completed only 33 months, or 55 percent, of its intended 60-month life. Of the 270 months of long-term technical assistance planned, only 175 months, or about 65 percent, were actually made available. Short-term technical assistance planned was 93 person months but only 35 months, or 38 percent, was used. For commodities, 67 percent (\$717,000) of the originally allotted \$1,068,425 was actually spent during the life of BEC. All of the long-term participant training (28 person years) was utilized; however, for short-term training, only 38.5 person months of the 108 available months (36 percent) was awarded. The following information shows the actual inputs into the curriculum development component of the BEC project.

Long-Term Technical Assistance to Curriculum Development

Advisory Position	Person Years	
	Planned	Actual
Curriculum Coordinator	4.00	2.75
Instructional Materials	3.00	1.75
Totals	7.00	4.50

Short-Term Technical Assistance to Curriculum Development

Consultancy Focus	Months	Number
Computer Awareness	1	1.50
English	1	2.00
Curriculum Policy	1	1.25
Time Tabling	1	0.75
Setswana	1	4.00
Third Language Acquisition	1	(Maximum)
Environmental Education (Editing Resource Book)	1	2.80
Totals	7	12.30

Participant Training Program	Number	Years/Months Trained
Long-Term	2	2.0years
Short-Term	3	10.5 months

Commodities (Major items)

Program	Number	Cost (P)
Long-Term	18	332 640
Short-Term	356	12 539
Total Cost		345 179

USAID/BEC Inputs Into Guidance And Counseling

While brief, direct references were made to guidance and counseling in the Project Paper, this area of the basic education program was not identified in any later documents for a specific role in BEC in the same sense that teacher education, assessment and curriculum development had been. The Guidance and Counseling Division was, however, the recipient of some BEC inputs .

No long-term technical assistance was planned for G&C: however, the Chief-of- Party (Dr. Murray Simon) did work directly with the Division upon the arrival of the Close-Out Coordinator (Dr. David Benedetti) on post in March, 1995. Dr. Simon's period of service was limited thereafter by sick leave for a six-week period and his departure from post in late July, 1995.

One BEC-funded consultancy was conducted for the G&C Division for the purpose of designing a training plan for those responsible for providing guidance services in the schools (primarily teachers). BEC also funded a long-term G&C participant for a Master's degree and provided \$43,365.00 in commodities. The latter included a computer, software programs, a copier and scanner.

Roles of CDD Advisors

Long-term advisors were key components of the three dimensions of BEC, thus it is appropriate in the evaluation process to describe the perceptions held, both by the two CDD technical assistants themselves and their Batswana colleagues, as to what those roles were and how they were performed. The basis for role performance was laid down in the respective job descriptions contained in the USAID/AED contract and in the CD&E job description required by the GOB Directorate of Personnel.

The title of Curriculum Coordinator in the job description was probably a misnomer, since the job description is explicit in stating that the role was advisory rather than "line"; the job description also states that "the test of the Curriculum Coordinator's performance is the extent to which Botswana professional educators are able to plan, produce, administer and sustain the basic education curriculum without further expatriate technical assistance." The job description further stated that the Curriculum Coordinator would maintain close working relations with the CEO/PEO who has primary responsibility for curriculum development and coordination and would have an important role in the linkage procedures among all BEC cooperating entities. Service on many committees and task forces, frequently as secretary, and a major role in the needs assessment process contributed significantly to the performance of that function.

Other specific job description responsibilities included: advising CD&E in the preparation of annual action plans; designing and implementing in-service training activities; advising in the design of participant training programs; participation in committees seminars and conferences; and the preparation of documents and reports related to curriculum development as required.

Information gathered through interviews indicated that very effective working relationships had been established by the Curriculum Coordinator with all curriculum development officers, with deep appreciation being expressed throughout for his expertise, accessibility, and the manner in which he provided assistance. A written statement on his role by the Curriculum Coordinator pointed out the importance of consultation in the Botswana culture and that the "advisor's role must be one of facilitator in assisting/advising our Batswana colleagues in accomplishing more effectively those tasks they themselves wish to achieve."

The role of the Instructional Materials Advisor addressed the logistical problem of getting instructional materials, tests and informational materials produced and distributed to the schools on time. The job description stated that " the overall success of the revised curriculum depends heavily on expanding the Ministry's capacity in the area of materials design and production."

Specific responsibilities assigned to the Instructional Materials Development Advisor included: advice in conducting a needs assessment in the BEC instructional materials area; advice regarding implementation plans; in-service training; participation in participant training

planning and follow-on activities; advising other MOE entities on instructional materials matters; and serving on relevant committees.

The Instructional Materials Development Advisor was originally scheduled for three years but, because of truncation, as noted above, served slightly over half of this period. The Advisor had the distinct advantage of having served in a similar role in JSEIP and of having developed a close working relationship with his counterpart who had received a Masters Degree through JSEIP. The job description for the Instructional Materials Advisor emphasized an advisory role; however, within days of his arrival truncation was announced. At that time very little equipment for CDD, including the materials development unit, had been ordered; nor had any arrangement been made for participant training. With close-out looming, plans were immediately made for a newly recruited long-term participant to depart to the US for graduate training; for short-term training (3 months) for his counterpart; and 20 computers with networking capability for curriculum development officers were ordered and installed, including network links among CDD offices. In-house, on-the job training for CDD officers and the production staff in the use of the new computers, e-mail and copy machines has been a major responsibility since the installation of the computers; however the deadlines for completion of the JC syllabi required much actual materials production work as well. The enhanced desk-top publishing capability and the networking of the CDD staff through e-mail, which permits the transfer of documents from one office to another, has greatly facilitated the curriculum development process.

Outputs Related to the Area of Curriculum Development

As defined in the BEC Project Paper, and stated or implied in other documents, the concept of "curriculum" is composed of two elements: curriculum as a product and curriculum as a process. BEC was concerned with both.

The notion of curriculum as product relates to the production of syllabi and instructional materials which are disseminated to schools and implemented by teachers with learners in classrooms. Curriculum as process refers to the clarification, refinement and testing of the curriculum development process, in concert with other related elements of the BEC project including teacher education and training, assessment of learning, and strengthening the MOE's capability (process) to develop and implement the curriculum (product). For purposes of the evaluation, the development of curriculum processes as well as curriculum products are treated as outputs. Other outputs of the BEC project include more highly trained curriculum developers and reports of consultants commissioned through BEC by the CDD.

Curriculum Product Outputs by CDD

The Three-Year Junior Certificate Syllabi. A major output stated in both the Project Paper and the USAID/AED contract, while never fully explained, was the production of "16 subject years" of curriculum during the life of BEC. On August 14, 1995 the CDD transmitted to the Ministry of Education Policy Advisory Committee (PAC) the new three-year syllabi for six core Junior Certificate subjects and one optional subject (21 subject-years) The syllabi were approved by the MOE/PAC on August 28, 1995 and will be implemented in the Junior Secondary schools beginning with the January, 1996 school term. Syllabi for Form 1 in three additional subjects are scheduled for introduction also in January, 1996. This is a major accomplishment for CDD in which BEC inputs of advice, training, computer equipment and materials production played a strong supporting role. The syllabi, in one sense, continues the school improvement cycle which leads to the development of new and revised textbooks and instructional materials, the training of teachers in the implementation of the new curriculum, the assessment of student performance, the evaluation of curriculum efficacy, and further modifications in the curriculum to address gaps, problems and emerging needs. The cycle then begins again.

The JC subjects for which new syllabi have been developed are:

- a. Agriculture (core subject)
- b. Art (optional subject)
- c. English (core subject)
- d. Mathematics (core subject)
- e. Science (core subject)
- f. Setswana (core subject)
- g. Social Studies (core subject)

The subjects for which Form 1 syllabi will be available in January, 1996 are:

- a. Commerce and Business (Optional subject, for trialing)
- b. Design and Technology (Optional subject until 1999, then core)
- c. Home Economics (Optional subject)

In the primary area, pupils' textbooks and Teachers' Guides have been developed in agriculture for Standards 1-4 .

A desirable degree of standardization among subject areas is reflected in the organization, introductory material, and in the presentation of the syllabi content. Each syllabus includes the following introductory material:

- a. Acknowledgments, which inter alia, identifies members of the syllabi task forces.

- b. Introduction, which provides interesting and useful information related to such matters as the history, development and use of the syllabus and, in the case of carrier subjects, references to the infusion of emerging issues.
- c. Rationale for the subject, which presents the case for the subject's inclusion in the JC curriculum
- d. Overall aims of the ten year program, which are the same for all subject areas.
- e. Aims of the ten year subject syllabus, which represent a significant step toward the creation of an integrated and unified basic education beginning with Standard One and extending through Form 3 (Year 10).
- f. Aims of the three year subject syllabus, which identify those objectives unique to the subject's junior secondary program.
- g. Assessment, which informs the teachers, students, parents and others of the nature of the terminal JC examination papers and the role and weighting which continuous assessment has in the examination process.
- h. Time allocation, which deals with length and numbers of periods per week for the subject.

The syllabi are further organized by terms (three for each year) and by years (three years). The content of the syllabi is structured, first by modules, then by units within modules, and further by topics. The critical content of the syllabi, which spells out what the nation wants its children to learn and directs what teachers shall teach, is contained in the objectives set forth for each subject area. The objectives are stated as "general" or "specific". Both the general and specific objectives are stated as "*Student will be able to....*" The verbs which follow this statement reflect the various domains of learning (knowledge, comprehension, application, analysis, synthesis and evaluation) and include the following: define, explain, list, identify, explain, compare, describe, determine, chose, recommend, invent and classify.

In cases where projects are a part of the syllabus, objectives stated in terms of what the student will be able to do at the end of the project are identified. An objective from the Social Studies syllabus illustrates this curriculum development concept (Form 1, Term Two, Unit 2 Project One: A public Issue; Topic: Alternative View): "By the end of this project students will be able to compare and contrast the merits and demerits of the issue in terms of its impacts on the public."

Infusion of Special Topics into the Curriculum. Over the course of the past several years a number of issues and concerns have emerged in the Botswana public conscience, as reflected in the *Report of the National Commission on Education, 1993*, which have demanded attention

by the public school system. These are: population/ family life education, HIV/AIDS, environmental issues, world of work and gender sensitivity. Faced on the one hand with student time tables already filled with required subjects of study, and on the other with the critical need to have the curriculum address the emerging critical social issues, the decision was made to incorporate study of these special topics into the curriculum utilizing the curriculum development concepts of infusion and integration.

The CDD has determined that some concepts related to the issues should be infused while others may need to be integrated into a subject. In distinguishing between these processes, the CDD states that "infusion includes the knowledge and skills required to be a natural part of the subject content, while the process of integration requires the teaching of a given concept as a separate topic within a subject." Infusion was also described as using the "teachable moment" to deal with special issues as unplanned opportunities arise within class settings. The commitment of the MOE to the incorporation of these issues into the curriculum in a systematic way is reflected by the earlier appointment of a Curriculum Development Officer with specific responsibility for identifying relevant concepts for inclusion and for working with other curriculum subject officers to integrate and infuse the related subject matter and for monitoring and evaluating the curriculum's effectiveness. In addition, the full time post of education officer has been established to provide leadership related to HIV/AIDS education and to liaise with the National Aids Control Programme. The position is currently being advertised.

The commitment of the MOE to incorporating these special issues into the basic education curriculum is further demonstrated in several ways. The general Aims of the Ten Year Basic Education Programme provide the GOB policy base for incorporating all of the special areas into the curriculum. Several of the subject syllabi statements of aims for their ten-year programs and three-year JC syllabus also include references to the critical issues.

Science, agriculture and social studies are three major "carrier subjects" in the JC curriculum for certain of the special issues. The following are specific examples of how the topics have been treated in these subjects:

World of Work: *Agriculture* (Form 1) Topic: Career and training opportunities in agriculture. General objectives: know what career opportunities exist in agriculture and the institutions in Botswana where agriculture training is offered. Specific objective: Name at least five careers in agriculture. Teaching learning experiences: participate in career fairs. *Social Studies* (Form Three) Topic: Human Resource Development. Students will be able to describe the importance of skilled manpower in the process of development and provide examples of how Botswana is developing skilled manpower.

Population/Family Life Education. *Science*. (Form Two) Topic: Methods of Birth Control. General Objective: acquire basic knowledge about the use of a variety of birth control

methods. Specific objective: discuss the implications of family planning in light of family size. *Social Studies*. (Form Three) Topic: Population Dynamics. General Objective: Students will be able to explain influencing variables to population development. Specific objective: Identify factors that contribute to population increase.

Environmental Issues. *Agriculture*. (Form One) Topic: Soil erosion and conservation. General Objective: know the meaning, causes, agents, control, prevention, effects of soil erosion, measures taken to conserve soil and how to farm land in a sustainable manner. Specific Objectives: describe how each type of erosion occurs; explain why it is important to conserve soil. Teaching Learning activity: carry out soil erosion control measures in the school garden and community. *Social Studies*. (Form Two) Topic: Botswana in the World: Unit 1- The Environment and Development. General Objective: Students will be able to understand the relationship between the environment and development on a sustainable basis. Specific Objective: students will be able to identify at least four environmental zones of the world.

It should be noted also that an *Environmental Education Resource Handbook* for teachers, edited through BEC funding, has been developed for the basic education program and awaits formatting by the materials production unit and publication. The Handbook employs the technology of infusion/integration and addresses the following issues identified in the National Conservation Strategy: pressure on water resources; rangeland and pasture degradation; depletion of wood resources; overuse of veld products; and industrial/urban pollution and urban enhancement.

Gender sensitivity. *Social Studies*. (Form One). Topic: Social Groupings in Botswana: Family. General Objectives: Students will be able to understand the purposes, composition, types of families, and changes that are occurring; and generate a gender analysis on the heading of households by women and men in Botswana. Specific Objectives: Compare and contrast the power roles and responsibilities of women and men in the home and in the society; describe the issues faced by females in female-headed households. *Setswana*. (Form 1) Culture: Family Institution. General Objective: Explain the cultural significance and value of the family institution, (past and present) as well as traditional activities associated with it. Specific objectives: Explain the cultural significance and value of the institution of the family and how it has changed between traditional roles and modern roles; relevant structures that are, or could be, used to bridge the gaps to provide modern youth with guidance.

Gender sensitivity references are found less frequently in the JC syllabi than are the other special topics. Curriculum development officers indicate that infusion, which relies on teacher initiatives as opposed to syllabi prompting, is currently the primary mode for introducing gender issues into the JC program. Instructional materials which are being developed to accompany syllabi will be important carriers of gender-related information and instructional suggestions. Gender sensitivity issues are also incorporated into the pre-service and in-service teacher education programs

The English Syllabi and Emerging Issues. The English JC syllabi, while not explicitly incorporating any of the special topics in its three-year program of studies, provides the following statement within the introductory section describing assessment procedures and strategies: "Within the time allocated, students should also have an opportunity to engage in cooperative tasks, researching such topics as Family Life Education, Population, HIV/AIDS awareness and environmental issues and reporting back to the class and others verbally, graphically and in writing. Individual achievement within such group activities can be subsumed under Continuous Assessment of specific language skills."

The Primary School Syllabuses and Emerging Issues. A review of the *Primary School Syllabuses for All Subjects* (Standard Five to Seven, 1993) does not include explicit references to the special topics of environmental awareness, population/family life education, HIV/AIDS or gender sensitivity. The topics will be infused/integrated into future revisions of the syllabi. Teachers in 10 primary schools and three junior secondary schools have been trained for pilot testing the Zimbabwe population/family life education materials for possible adaptation into the Botswana school system.

The Guidance and Counseling Program and Emerging Issues. The draft curriculum for the Guidance and Counseling program for Standard 1 through Form 5 places substantial emphasis on family life education, HIV/AIDS, and the world of work. Students are first introduced to the world of work curriculum in Standard 1; planned parenthood is presented beginning with Standard 4; and explicit objectives relating to sexually transmitted diseases, including

HIV/AIDS, appear in the Standard 5 curriculum. These topics are all further developed at higher levels in the educational system.

Curriculum Processes to Improve the Quality of Curriculum

The concept of "systems" development permeates the BEC project. Curriculum development as a process implies that a system is being developed, used, evaluated and refined to improve the relevance and quality of the schooling experience for Botswana's school-aged population. One may conclude that the collection of processes which are applied toward the development of curriculum constitutes a system, and that attention to the improvement of the curriculum development system exists as a major responsibility for CDD along side that of delivering the finished curriculum product to the schools.

For purposes of the BEC summative evaluation, the processes of curriculum development are defined to include the following: (a) documents, programs, papers and the like which are prepared and designed to provide guidance and assistance to curriculum developers; (b) the collection and generation of information which will facilitate curriculum evaluation and decision making; (c) the structuring of interactions among individuals and groups both within CDD and across departmental lines in order to facilitate communication, collaboration, cooperation and commitment to courses of action which have been chosen; and (d) capacity building through training. These CDD system elements, as they apply to the curriculum development process, are described in the following paragraphs.

CDD Documents and Papers Which Provide Guidance to Curriculum Developers.

Curriculum Development Procedures Manual. The Manual was developed, used, evaluated and modified through the JSEIP. It is a comprehensive document of five chapters which leads the curriculum development specialist through the steps of developing a syllabus, developing a curriculum blueprint, developing curriculum materials, implementation of the curriculum and finally to formative evaluations and revisions of the curriculum. The Procedures Manual was an important aid to the development of the three-year JC curriculum and was reported to be especially helpful to the seconded teachers serving as curriculum development officers. An objective of BEC was to evaluate and revise this basic curriculum development document in light of experience with its use. Review work to determine what still needs to be revised is on-going; however, the following additions to the Manual have already been identified and produced: concepts of infusion/integration; the Curriculum Blueprint; the need for early consultation between curriculum developers and the production unit; establishing task forces; and the role of the Textbook Evaluation Committee. In addition, the revision and development of the chapter on curriculum evaluation remains a substantial undertaking as does a chapter, jointly developed with ERTD, on student assessment. The format and design of the Manual is such that revisions are easily accommodated. Publication of the revised Manual will not occur, however, before the close-out of BEC.

The curriculum development processes followed by CDD reflect a faithfulness to the guidelines laid down in the Procedures Manual, including that of trialing new instructional

materials such as the HIV/AIDS materials from Zimbabwe which is being considered for use in the primary schools. The draft syllabi, on the other hand, were subjected to two-day review and feedback sessions with subject teachers in each of the five regions, totaling as many as 200 teachers in some subjects.

Guidelines for Developing Syllabus Content, Format, and Other Aspects Related to the Syllabus. This brief document, dated August 9, 1995 is a supplement to the Curriculum Development Procedures Manual which, among other things, provides specific instruction about syllabus format and content to curriculum developers.

Curriculum Blueprint: Ten Year Basic Education Programme. While not a detailed document in the usual definition of a curriculum blueprint, it serves a critical purpose of interpreting concisely for curriculum developers and others the Revised National Policy on Education which calls for the introduction of the three-year JC curriculum. The document incorporates the basic education philosophy, the components of basic education, strategies for implementing basic education, basic education objectives, the aims of basic education, program content by core and optional subjects, time tabling within the school, program and student assessment, support services and strategy for implementation of the three year course.

Checklist for Determining Extent to which the Aims of the Ten-Year Basic Education Programme, Subject Aims, and Other Factors Are Appropriately Included in a Subject Syllabus. The checklist provides a quality check to ensure in each syllabus that certain key requirements, including special topics, have not been overlooked.

Instructional Materials Prescription Manual. This document, developed by the CDD and published under the title "1996/97 Primary Schools Supplies-Requisition Forms" is distributed to all primary schools for the purpose of facilitating the ordering of school instructional materials and supplies. The document is a modification of the 1993 edition which incorporates curricular and instructional materials changes in the primary schools and further systematizes the process of requisitioning materials for schools.

The Structures for Curriculum Development.

The structures that have been developed over time to assist the curriculum development process includes an array of committees and task forces. The purposes of these structures include planning, evaluating and managing, all relating in some way to the processes of curriculum development. Some are on-going groups, while others have been established for specific purposes and will be disbanded upon completion of their tasks. The web of committees and memberships, all focusing in some way upon curriculum development processes, are indicative of the high value placed by the Batswana generally upon consultation and consensus. The move to even greater consultation within CDD was given stimulus by the NCE (1993) which found that existing consultation arrangements were not adequate and recommended the establishment of a high level Curriculum Coordinating Council with representatives from all interested sections from within and without the Ministry.

The Interdepartmental Task force on the Introduction of the 3 Year Junior Certificate. This broadly based group, chaired by the CEO for CD&E, includes representatives from 11 departments within the MOE. (Curriculum Development, Secondary Education, Vocational Education and Training, Secondary School Headmasters, Guidance and Counseling, Examinations, Research and Testing, Primary Education, Non-Formal Education and Teacher Training and Development- Pre-service and In-service.)

The scope of work for the Task Force "encompasses a broad set of planning, curricular, training, and learning issues that will affect every component of the 3 YR JC." These include: monitoring, reviewing and implementing one continuous curriculum that provides a smooth transition between all levels (1-10 in the immediate term and 1-12 in the medium term); ensuring that the revised curriculum is integrated into both the pre-service and in-service teacher education programs; identifying training priorities; working out subject time tables; monitoring the development of G&C in the schools; monitoring the continuing development of the assessment system; planning the dissemination of curricular materials; and developing strategies for the assimilation of non-formal education into the three year JC program.

Subject Task Forces. Each subject area actively engaged in the curriculum development process, as a matter of CDD policy, formulates a subject task force which is advisory to the CDD. The written Terms of Reference for subject task forces include assisting with the following tasks: developing subject aims, developing strategies for designing the new programme, developing guidelines and setting time frames, identifying additional subject resources; developing the syllabus and support material, reviewing materials developed by other agencies and serving as a reference committee for consultancies.

CDD policy states that membership on task forces should be relevant to the subject area and should include, in addition to members from 16 departments and divisions within the MOE, representatives from the University of Botswana, Botswana Confederation of Commerce, Industry and Manpower, practicing teachers and other relevant ministries and NGOs. As a way of monitoring task force policy, CDD has prepared a chart showing for each subject, the departments, agencies and organizations represented on each subject task force.

The Management Committee/Curriculum Planning Task Force. The Senior Education Officers and the Principal Curriculum Development Officer, as chair, constitute both the Management Committee for the CDD and the Curriculum Planning Committee. As Management Committee, it attends to the many administrative details relating to the operation of the Division. As Curriculum Planning Task Force, its responsibilities include: overall curriculum planning and design; analyzing recommendations and devising implementation procedures; monitoring development of materials; developing guidelines for cross-curricular infusion and integration of concepts; developing terms of references for consultancies; monitoring implementation timetables; assuring implementation of the guidelines contained in the curriculum framework prototype; and reviewing membership of the subject task forces.

Basic Education Implementation Committee. Originally planned in the PP as the BEC Curriculum Coordinating Advisory Committee, it was renamed early on and the membership broadly extended in order that the Committee could assume an on-going status not linked to the limited life of the BEC project. The terms of reference for the Basic Education Implementation Committee included the following:

- (1) Serve as project implementation advisory body to the MOE in all matters concerning basic education.
- (2) Provide a forum for identifying, selecting and recommending strategies for consolidation of basic education.
- (3) Review and evaluate the design, implementation, communication and coordination of basic education.
- (4) Facilitate joint planning among relevant stakeholders.
- (5) Provide a forum for information sharing and to facilitate consultation among MOE departments, divisions and units and other related ministries and bodies concerned with basic education.
- (6) Disseminate information on basic education to the public.

The membership of the Committee included, among others, representation from all relevant departments in the MOE which included BEC advisors, the Ministries of Finance, Health, Local Government and Lands and Home Affairs, the University of Botswana and affiliated institutions, vocational education programs, the Botswana Institute for Commerce and Industry and the Institute for Development Management. The Committee meets on a quarterly basis and was chaired alternately by the CEOs for CD&E and TT&D.

Textbook Evaluation Committee. This committee, to be chaired by the Deputy Permanent Secretary, was mandated by the RNPE to evaluate materials for publishing and to approve textbooks to be used in the primary schools. The terms of reference for the Committee are presently being formulated by representatives from the Departments of Primary and Secondary Education; however, policy states that membership should include teachers, education officers and representatives of teachers' organizations.

Curriculum Evaluation Committee. This Committee was charged with developing a procedure for evaluating the curriculum. The Committee has recommended that a task force be formed to carry on its task; however, a decision has not yet been taken on its recommendation.

Staff Meetings. Staff meetings, held bi-monthly, and chaired by the Principal Curriculum Development Officer, serve the purpose of keeping the members of the Division informed about developments and to provide a forum for discussion of issues and problems. Minutes of staff meetings are circulated to the CEO/CDE for informational purposes.

Other Structured Group Events

The curriculum development process during the BEC time period has included a number of significant activities and meetings designed to serve specific purposes.

Needs Assessment for Basic Education. The needs assessment was conceptualized as the initial step in the implementation of the USAID/GOB Basic Education Consolidation project and was the first major activity in the project. It involved over 200 educators and interested citizens in two indepth workshops, a retreat, school and college visits, and debriefing meetings. Taking place over the period from December 1992 through July 1993, it culminated in a document of more than one-hundred pages which identified priority needs for the consolidation of basic education in Botswana and work plans for the BEC team. Within three months of the approval of the Needs Assessment Report by the MOE and USAID, the truncation of BEC was announced, setting in motion the preparation of plans for the early close-out of the project. There was a "hurry-up" effort to accomplish as many as possible of BEC's original objectives, particularly with regard to participant training, the use of consultants and the purchase of commodities.

Goals Analysis and Design Meeting. Organized by CDD and conducted on August 12, 1994, the outcomes of this meeting represented an important step on the way to developing the Curriculum Blueprint. Attending were 27 participants from CDD, ERTD, TT&D, DNFE, Guidance and Counseling, Secondary Education, Primary Education and BEC. The stated purpose of the meeting was to analyze the goals of the 10 year basic education program in light of the then current nine year program; the Report of the National Commission on Education (1993); and the Revised National Policy on Education, including the Philosophy of Education and the Definition of Basic Education. The agenda of the day-long meeting included small group discussions, reports of small groups, presentations related to elements of the RNPE, purpose and components of the syllabi, instructional materials development procedures, CDD subject task forces, and implementation time-line for the three-year junior secondary education program.

JC Syllabus Retreat. This was an intensive two-day meeting (July 11-12, 1995) of all curriculum development officers planned to ensure quality control of the curriculum development process and cross-curriculum coordination. Specific items on the agenda included reconfirmation of the organization of the syllabi; procedures to guide the syllabus review process; cross curricular coordination including scope and sequence, timing related topics, and infusion of concepts; and group reports on cross curricular coordination; syllabus review and action plans.

Curriculum Related Consultancies

BEC was the instrument through which six consultancies initiated by CDD and one by G&C

were carried out. The areas of study had their genesis in the NCE Report and the RNPE, the needs assessment and deliberations within CDD. Terms of reference were established for each consultant by relevant task forces and or committees who, typically, met with and guided the work of the consultants during their period of research in Botswana. The focus of the consultancies, their dates and the names of the consultants were as follows:

Focus	Consultant	Date
English Language	Janet Ramsay Orr	June 16, 1995
Computer Awareness	Peter Dublin	June 20, 1995
Setswana	Lydia Nyati-Ramahobo	September 30, 1995
Basic Education	Cream Wright	April , 1995
Curriculum Policy		
Junior Secondary	Cream Wright	July, 1995
Time Tabling/Subject Combinations		
Environmental Education	Lois Berger	September 30, 1995
(Edit Resource Book)		
Guidance/Counseling	Wayne R. Mae	May 31, 1995

Most of the consultancies identified above, some still in draft form, have been completed so recently that only preliminary analyses, at best, had been attempted at the time of the evaluation; however, sub-committees have been appointed to review the CDD consultancy reports and develop suggestions for implementation. The subcommittee reports are to be submitted to the PEO/CDD prior to September 29, 1995. It was confirmed that the focus for each consultancy was developed in consultation with stakeholder reference groups, thus ensuring that relevant issues were addressed. Brief comments about the consultancies seem to be in order.

English Language Consultant Report. (Orr) The RNPE mandates a major language policy change which introduces English as the language of instruction in Standard Two. The Report was circulated to relevant curriculum development officers on August 30, 1995 for review and analysis.

Towards a Curriculum Policy for Basic Education in Botswana. (Wright) The consultancy not only addresses issues of curriculum development, but holistically treats implementation and assessment relationships as well. His observations with regard to the need for more effective synthesis and coordination of the parts comprising the "machinery" of basic education speak to the purpose and intent of BEC- the consolidation of basic education in Botswana. This study is

deserving of careful analysis by all MOE departments having a role in the development, implementation and evaluation of basic education.

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Subject Combinations and Time-Tabling for Basic Education in Botswana. (Wright, a follow-on study) This report is especially timely in view of the relatively large number of RNPE subject mandates for the JC curriculum and contemporary thought relating to curricular and instructional approaches which foster problem solving and critical thinking skills. A curriculum which features teaching many discrete subjects in short time segments over a ten-year period may encourage continuation of the lecture/rote memorization method of instruction- an outcome in direct opposition to stated MOE intent!

Policy Guidelines on the Implementation of Guidance and Counseling in Botswana's Education System (Maes, draft). This study focuses on the training of guidance teachers for all levels of the education system, utilizing a training-of-trainers model. The report was one dimension of a BEC-sponsored seminar on the topic of "Exploring Work as Preparation for Life in Botswana" organized by the consultant and reference committee and held at the Botswana Productivity Centre on July 20, 1995. Most stakeholders in the school guidance and counseling movement in Botswana were represented in the seminar.

Towards a Computer Awareness Policy for Basic Education in Botswana (Dublin). This consultancy responds to the RNPE mandate that computer awareness be incorporated into the curriculum of the junior secondary schools. The report includes recommendations concerning a computer awareness program that can be implemented over the next five years, taking into consideration the financial, teaching and teacher training resources available in Botswana.

The Environmental Resources Handbook (Berger, ed). This publication, presently awaiting formatting and printing in the Materials Development Unit, will be a significant contribution to the teaching and study of environmental issues in the schools. This document, although not a BEC initiative, was supported by project funding for editing.

Training

Three types of training outputs occurred during the period of the BEC project: long-term participant training, short-term participant training, and "in-house" training. Of the 24 long-term participants, two were from CDD and one from Guidance and Counseling. The explanation for the disproportionately small number of long-term participants from CDD was that most of the curriculum development officers who could be released for long-term study were diploma holders and that USAID policy was to support first degree holders only for training of this duration. Four of the 22 BEC-supported short-term participants were from the CDD. Short-term training included formal study at universities in the United States and study/observation tours to Malaysia, Singapore and the United States. CDD and G&C long - training and CDD short-term training was as follows:

Long Term	Curriculum Area	Degree
Mr O. Pitso	Curriculum/Mathematics	Masters
Mr L. Tladi	Media and Instruction	Masters
Mrs M. Mabote	Guidance/Counseling	Masters
Short Term	Study Focus	Time
Mrs K Leçoge	Study/Observation	1 month
Mrs F. Leburu-Siang	Education Policy	1 month
Mrs E. Baakile	Art Education	6 months
Mr D Ratsatsi	Computer Applications	3 months

In-house training was an on-going process by the BEC advisors but it took on special significance when the large number (20) of inexperienced seconded teachers were thrust into curriculum development roles. Shortly after their arrival, a three-day orientation seminar was conducted by CD&E, with participation by the BEC curriculum advisor, for seconded officers to provide them with an introduction to the curriculum development process. The BEC advisors for curriculum development and materials development provided training to CDD officers, frequently in one-on-one situations, in response to requests for assistance. The curriculum development advisor ordered books and other curriculum development training materials for the curriculum development officers, placing them in the CD&E Resource Center. Using these reference materials, he developed self-instructional training materials for the curriculum development officers in such areas as curriculum scope and sequence, curriculum objectives, the world of work, assessment, the foundations of education, and miscellaneous topics including sex education and gender issues. In-house training has also been directed to the senior education officers who have special curriculum development responsibilities for clusters of subject areas.

Some regularly scheduled training sessions for curriculum development officers and the technical support staff in the materials production unit were conducted by the BEC advisor in the use of the new computers, the e-mail network and copiers. When the curriculum development officers' workloads became so highly demanding the regular meeting times had to be suspended. BEC-purchased self-instructional software and videos dealing with various components of computer usage and desk-top publishing represent additional training modes being utilized with the materials production officers. With the completion of the JC syllabi, scheduled training sessions will resume. The contract for the materials development advisor was extended as long as possible to respond to this training need. The addition of a PEO II level position in the curriculum materials area, and the return of the Master's level media participant suggest that the anticipated heavy demands placed upon this unit in the foreseeable future can be accommodated.

BEC-supported training for curriculum development officers should also be viewed in the larger training context in which the GOB historically has made a major commitment to training in all sectors as a central element in the national development process. The expansion of tertiary education in Botswana, including graduate programs in education, and support for study abroad in fields not available in Botswana is indicative of this commitment. A GOB bursary is currently supporting a curriculum development officer for a Bachelor's degree in Home Economics at the University of Swaziland and the curriculum evaluation officer will be leaving for Sussex University in October to work on a Bachelor's degree, also on a GOB bursary.

Research and Evaluation

The BEC project was conceptualized as a triad, composed of curriculum development, curriculum implementation and curriculum evaluation. The collection and analysis of reliable, relevant and timely information is central to a philosophy of curriculum development which has a goal of continuous review and improvement. Sources of such information include needs assessment, data regarding student performance on examinations, reports from teachers, reports from supervising education officers, school visits by CDD officers, curriculum trialing, action research, experimental studies carried out in schools, and research reports from respected educational journals. BEC made explicit provisions for a needs assessment as prologue to the development of an institutional strengthening plan and individual work plans for the BEC team members. As noted earlier, this was carried out. In addition, six BEC-funded studies targeted primarily for CDD, discussed above, contributed information on specific curriculum related problems. A seventh proposed BEC consultancy dealing with the history of basic education in Botswana since the first National Commission of Education (1977), while given a high priority by Chief Education Officers in CD&E and TT&D, was not implemented.

Three other research reports are attributable to BEC technical assistants in collaboration with Batswana colleagues: A study of *Primary School Repeaters: 1979-1991 Some Considerations for Curriculum Development and Implementation* (July, 1993); *Botswana Education Statistics in Brief* (October, 1993) and *A Graphic Look at Botswana Basic Education* (January, 1995).

School visits were an additional source of information for CDD. In June, 1993 visits were undertaken to five primary and five junior secondary schools in Northern Botswana. These visits resulted in a publication entitled *The Northerners: A Complete Report of a Mini Survey Conducted by CDD Officers on Curriculum Implementation in Some Selected Schools from the Northern Part of Botswana*. The survey included interviews with teachers, school heads and field education officers and the completion of questionnaires. The purpose of the survey was to get feedback on the aims of basic education and the appropriateness of curriculum material and to ascertain the availability of curriculum material and the problems of procurement, warehousing and distribution of instructional materials.

School visits were also made to primary and junior secondary schools in the Southern Region of the country during June, 1993. A report of the visit indicated that " individual officers have reviewed information that relates to their subject area, and have noted areas in which adjustments are required to develop more effective syllabi and curriculum materials in the basic education programme."

The needs assessment had concluded that a study should be conducted on the process of disseminating curriculum materials; the extent to which curriculum materials were available in

the schools; and on implementation procedures to expedite timely dissemination. Although a study to improve the distribution of instructional materials was not conducted during the BEC project, CDD, in partial response to the problems associated with the distribution of instructional materials, published the modified 1996/7 Primary Schools Supplies Requisition Forms which is intended to simplify the school supply ordering process.

The development of a student assessment and evaluation program, utilizing continuous assessment and criterion referenced testing, was one the main elements of BEC. The assumption was made in the project design that the examination results of student performance would be of value not only to students, teachers and parents, but also to teacher training institutions and to those responsible for developing improved curricula. As BEC draws to a close, measures of criterion-referenced student achievement performance are not yet available to enlighten the curriculum development process. The collaborative development of test blueprints by ERTD and CDD for Junior Secondary schools has been initiated with a target completion date of January, 1996.

Two additional areas of study were proposed for BEC. The Project Paper indicated that baseline data on performance achievement disparities will be collected by gender at primary and secondary levels, by subject matter and on the occupational aspirations of students. The needs assessment yielded a recommendation that data be collected on the extent to which limited English proficiency on the part of students and teachers impacts examination performance and the ability to obtain and maintain employment. Neither of these studies was carried out since there is no mechanism now established for collecting information on these variables.

Summary, Assessment and Recommendations

The previous sections of the chapter represent an attempt to present and describe factually the goals and objectives of BEC as they relate to the curriculum development process, the resources that were made available through USAID and the contractor (AED) to implement this portion of the project, and the accomplishments, or outputs, of the undertaking. In this section of the report the focus is a more judgmental one, comparing accomplishments with stated project intentions, noting areas of strength in the curriculum development process as well as areas in need of early attention and offering some recommendations. The reader is reminded that this summative evaluation is occurring at a point in the project's life when a formative evaluation would ordinarily have been conducted.

The purpose of the Basic Education Project was to assist the Ministry of Education to plan, implement and evaluate an integrated, consolidated and coordinated basic education system covering ten years of primary and junior secondary education. The Scope of Work for the evaluation of BEC provided two statements of goals relevant to the curriculum development component of the project. They were:

1. Enhance the established system to plan, produce, disseminate and evaluate a relevant, improved quality, ten year basic education curriculum.
2. Improve the quality of curriculum and instruction offered to primary and junior secondary students in classrooms nationwide.

The collection of data was guided by the following tasks identified in the Statement of Work for the summative evaluation of the curriculum development component of BEC. These statements provide the structure for the conclusions which follow.

1. Assess the effectiveness of policy and institutional development procedures instituted within the Curriculum Development and Evaluation (CD&E) and Teacher Training and Development (TT&D) departments.
2. Assess the extent and type of curriculum development activities to produce the revised basic education performance curriculum in each subject area.
3. Assess the extent and type of curriculum infusion of special subjects such as AIDS awareness, environmental education, gender issues and the world of work.
4. Assess the education officers' proficiency in the use of project purchased commodities, e.g., computer and video equipment, photocopiers, books, etc., in the production of curriculum materials.
5. Assess the extent and type of in-house training provided to the education officers by the BEC advisors and the effectiveness of officers to implement the training.
6. Assess the short and long-term training for education officers, both in country and international, the appropriateness of the training for the position held.
7. Assess extent of MOE's implementation of consultants' recommendations
8. Assess the relevant publications and reports connected with the project, their distribution, acceptance and use in schools.
9. Assess the impact of long and short-term training on the job performance of the officers. (In country and international training)
10. Assess the sustainability of project outputs in light of the early truncation of the project.

Summary of Findings

The summary of findings is organized in accordance with the categories of objectives, outputs and activities identified and presented earlier in the chapter: curriculum and materials development, process and structure, research and evaluation and training.

Curriculum and Materials Development. New three-year syllabi for six core subjects and one

optional subject, which respond to the mandates and spirit of the Revised National Policy for Education, have been produced and will be introduced into the Junior Secondary schools in January, 1996. Form One syllabi for three other subjects will be completed by the end of this year and also be ready for introduction into the schools. Content related to the emerging national issues of population/family life education, HIV/AIDS, world of work, environmental education and gender sensitivity has been integrated and/or infused into the three year curriculum. Syllabi development has been guided by a Curriculum Development Procedures Manual, resulting in a uniform standard of organization, structure and format. The development of student textbooks, teachers' guides and related instructional materials to accompany the syllabi are in the planning or early developmental stages.

The Division of Guidance and Counseling has developed a draft program outline for the primary, junior secondary and senior secondary schools which incorporates content and activities throughout related to the national issues noted above, except for environmental education.

Process and Structure. The experience of the CDD staff in the use of the Curriculum Development Procedures Manual, perhaps the most basic reference document for curriculum developers, is resulting in recommendations for revisions. At the time of the evaluation, the publication of the revised Manual had not occurred.

The Curriculum Blueprint: Ten Year Basic Education Programme. A second basic document in the curriculum development process, was an outcome of the needs assessment process. It defines the concepts of basic education and consolidation, sets forth the new philosophy of education and describes the strategy for implementation of the new three year junior secondary program. This document was distributed nationally. Additional printed aids (guidelines, charts, etc.) have been developed in response to emerging needs during the process of developing the three year JC syllabi. These items will form the basis for revisions in the Procedures Manual.

Eight different task forces/ committees of an on-going nature were identified as having important roles in the curriculum development, implementation and evaluation processes. With perhaps one exception (CDD staff meetings), these groups were established during the BEC era in response to needs for improved communication, consultation and cooperation among parties which are key players in the implementation of the basic education program. Other critical structured group processes (e.g., the needs assessment for basic education, the goals analysis and design meeting, and the JC syllabus retreat) were carried out on an "as needed" basis in response to the developments in the curriculum formulation/implementation process and the design of the BEC project.

Research and Evaluation. The curriculum development process was informed by a number of research and evaluation activities during the BEC project period. These included the needs assessment, studies by CDD officers based on school visits and six BEC-funded consultancies

focused on selected curriculum development issues. In most cases, reports of the consultancies were received late in the life of the project or had not yet been received at the time of the evaluation. While evaluative reports of student performance on criterion-referenced testing/continuous assessment in the 41 pilot schools were not available during BEC's shortened life, considerable progress is being made in establishing a system of testing which will provide useful reports on student performance to curriculum development officers. A CDD evaluation committee has recommended that a task force be established to formulate a plan for curriculum evaluation.

Training. Three types of BEC-funded training occurred during the project: long-term, short-term and in-house on-the-job training. CDD had two long-term participants who received Master's degrees and four short-term participants who participated in study/observation tours abroad. Both BEC advisors attached to CDD did extensive on-the-job training in their respective areas of instructional materials development (mainly computer skills) and curriculum development. In addition to BEC-funded training, the MOE, in keeping with its development policies, provided two bursaries during the project period to CDD officers.

Conclusions and Assessments

The findings of the evaluation focused on the Curriculum Development Division strongly suggest that BEC, even with its shortened life, has made a very substantial contribution to its goal of enhancing "the established system to plan, produce, disseminate and evaluate a relevant, improved quality, ten year basic education program. The following conclusions and assessments, based upon those findings, support that judgment even while acknowledging that some targets were not reached or were not as fully accomplished as the parties to the undertaking would have liked.

Conclusions and Assessments Concerning Curriculum and Materials Development. Given the relatively late start on the development of the three year curriculum, the MOE-imposed tight deadline and problems of staffing within CDD, the delivery of revised syllabi for six core subject and one optional subject in time for the start-up of the 1996 school year represents a major accomplishment which all of those associated with that challenge can take pride. Equally important is that a curriculum development "pipeline" is filled with tasks and established timelines related to the scheduled completion of the remaining syllabi in the three year JC program and the writing or procuring of textbooks, teachers' guides and student materials.

The content of the JC curriculum as expressed in the syllabi addresses the issue of curricular relevance to emerging national and individual needs as Botswana increasingly transforms from a rural, agriculturally based economy to a more urbanized, industrialized society. A substantial number of changes appear in the three-year JC syllabi which were not in the previous two-year

program of studies which address the criteria of relevance, depth and scope and sequence. The attention given in the new syllabi to the interrelationships of skills across subjects and from one form to the next represents a significant step in the process of "consolidating basic education", a step which curriculum planners indicate is being carried over to the integration and articulation of the primary and junior secondary curricula.

Conclusions and Assessments Concerning the Processes and Structures for Curriculum Development. Overall, the systems for curriculum development which have been evolving since the founding of the CDD nearly two decades ago are being firmly established. Sound processes for curriculum development are known, practiced, evaluated and improved. Concrete steps have been taken to address the issue of consultation in the curriculum development and implementation process through the creation of a high-level interdepartmental body to provide direction and advice; and to the use of broadly based task forces, relevant to each subject area, to participate in designing, developing and evaluating curricula. The recently adopted Curriculum Blueprint makes a significant contribution to the system for curriculum development and dissemination in two ways: a) by articulating the new philosophy of education, clarifying and defining critical basic education concepts and setting forth a strategy for implementation of the new basic education program and, b) by serving as an instrument of communication about basic education throughout the educational system. A conscious search for greater coordination, more effective communication and a higher level of collaboration and cooperation among MOE units and individuals responsible for the basic education program seems to be evident. It is especially encouraging that concerned leaders recognize that much more must be done in this regard, and that the improvement of the quality educational opportunity for all children and youth in Botswana is related in no small measure to the ability and willingness of curriculum developers, teacher educators, evaluators of student learning and field officers to plan together, to coordinate activities and efforts and to jointly evaluate progress toward common goals.

Conclusions and Assessments Concerning Research and Evaluation. A systematic, plan for the formative and summative evaluation of the curriculum is not now in place. That the CDD attaches significance to research, however, is evident in a number of ways: the research studies that have been carried out or are in process; the consultancies which have been commissioned; the inclusion of a chapter in the Procedures Manual dealing with the formative evaluation of curriculum as it is being developed; the appointment of an education officer with responsibilities for curriculum evaluation; the establishment of a committee to develop a plan for the evaluation of curriculum; and the intent to incorporate student achievement results into the curriculum evaluation process.

The CDD has a decade-long history of utilizing consultants to investigate and provide recommendations regarding important issues which need to be addressed. The problem areas chosen for special study under BEC represented priorities needing attention at this stage of the curriculum consolidation process. While detailed analysis of the six consultant reports by CDD staff will not occur during BEC, it is apparent that the reports present a great deal of information on their respective subjects which will enlighten and inform curriculum decision processes of the CDD.

Conclusions and Assessments Concerning Training. Relevant, appropriate training for curriculum development and evaluation officers is perhaps the most urgent need of CDD as it looks to the continuing professionalization of its services to the nation. BEC made a contribution to the training of curriculum development officers; however, this may be the area which was most adversely affected by truncation of the project. It is regrettable, given the level of need in the Division, that it did not receive more long-and short-term training through BEC; however, the programs of study and the level of academic performance by the two CDD long-term participants appeared to be highly appropriate and acceptable.

The extent of in-house training by the curriculum advisor and the instructional materials advisor was also sharply limited by the early close-out of the project. Given the workloads and tight deadlines facing curriculum developers during the latter months of BEC, the individualized training of CDD personnel, usually in response to highly specific needs at particular moments in time, seemed to be highly effective. The near unanimous requests of curriculum development officers for more training reflect desirable, professional attitudes toward their work. The level of skill of the curriculum development officer responsible for materials production assures that on-the-job training in the use of the BEC-provided desk-top publishing can be sustained after the project's termination.

With the exception of the Principal Education Officer for the CDD, who has other highly demanding responsibilities, there are currently no curriculum development officers who have the breadth of expertise and training to continue the quality of in-house training which the BEC Curriculum Coordinator has provided over the past two and one-half years. The Senior Education Officers will, however, be able to provide much assistance within the realm of their responsibilities to their curriculum development colleagues.

Recommendations

Had the BEC project gone to full term, this evaluation, rather than being a summative one, would have been formative in nature, incorporating recommendations relating to ways in which BEC could at its mid-point more effectively assist the CDD in its contribution to the attainment of a consolidated, integrated basic education program for Botswana. While recognizing that BEC will soon be relegated to history, the following recommendations are presented on the occasion of the final evaluation in the spirit of wishing to be constructive as

the MOE and its constituent components, together, continue their steady progress towards an ever-improving system of basic education.

CHAPTER 3. TEACHER TRAINING

The Department of Teacher Training And Development

In 1989, the Ministry of Education established the Department of Teacher Training and Development with responsibility for planning, developing, coordinating, and implementing Preservice, Inservice, and staff development program for teachers and staff in primary school, in junior and senior secondary schools, in the Primary Teacher Training Colleges (PTTC), in the Colleges of Education (COE), in the Education Centers and Inservice regions, and in the Ministry departments themselves.

Mr. M. Rathedi, a former PTTC and COE Principal, assumed the position of Chief Education Officer of the Department in October, 1994. He is assisted by two Principal Education Officers, Mr. L. P. Kopong, in charge of Preservice Education, and Ms. K. Motlotle, in charge of Inservice Education. Mr. M.C. Malongwa has served as Acting Principal Education Officer/Preservice while Mr. Kopong has been on a BEC-sponsored short-term study leave at the University of Massachusetts for the past three months. Ms. R. Mphahudi heads up the Training office.

The Preservice Unit has responsibility for the three Primary Teacher Training Colleges and the three Colleges of Education, two of which train junior secondary teachers -- during the BEC project Tlokweng was in the process of changing from a two-year primary certificate granting PTTC to a three-year primary diploma granting Primary College of Education. Next year, Lobatse TTC will make a similar transition, with Serowe TTC and Francistown TTC to follow later. Mr. Rantabe, an Education Officer, also has responsibilities within the unit.

The Inservice Unit has responsibilities for the staff development and other inservice services for primary, junior secondary and senior secondary schools. The unit works with six regional inservice offices with 39 Inservice Officers at the secondary level and 16 Education Centers (eleven fully operational with residences and hostels; one just being completed; and four staffed with education officers only) each directed by a Senior Education Officer and including education officers on their staff. In addition to a Senior Education Officer/Inservice Secondary (Mr. Kgotla) and two SEO/Inservice Primary (both currently vacant), the department staff also includes a SEO/Inservice Assessment Officer (Mr. S. Sefhako) working as a liaison with the ERTD activities in continuous assessment and criterion-reference testing, Ms. R. Wigget and a Media Team, Mr. Chris Busang, who just returned from a BEC-sponsored study leave at Ohio University, and Mr. Mazhani.

The activities of the Preservice Unit take place at the following locations:

Primary Teacher Training Colleges

Francistown Teacher Training College
Lobatse Teacher Training College
Serowe Teacher Training College

Primary College Of Education

Tlokweng College Of Education

Junior Secondary Colleges Of Education

Molepolole College Of Education
Tonota College Of Education

The activities of the Inservice Unit take place, primarily, in the following locations:

Education Centers

Francistown	Lobatse	Serowe
Maun Mochudi	Molepolole	
Tsabong	Gantsi	Tlokweng
Kasane	Mahalapye	Selibe-Phikwe

Regional Inservice Offices

Francistown
Gaborone
Lobatse
Maun
Selibe-Phikwe
Serowe

Education Inservice Offices

Letlhakane
Palapye
Kanye
Jwaneng

Breakthrough Office - Tlokweng

In 1993, the Basic Education Consolidation Project (BEC) was established as a joint program between the government of Botswana Ministry of Education and the United States Agency for International Development; a contract was signed with the Academy for Educational Development in collaboration with other subcontractors. Two staff members from BEC were assigned to the Department of Teacher Training and Development. These include a Preservice Advisor, Dr. Johnson Odharo, who arrived in December 1992 and began work in January 1993, and an Inservice Advisor, Dr. Donna Kay LeCzel, who worked as a short-term consultant in February 1993 during the needs assessment process and began full-time work in July 1993. The former was still on assignment during the evaluation team visit; the latter had left the week before the team arrived.

In addition, BEC project provided 16 Botswana educators with long-term training experiences and 14 educators with short-term training as well as 36 computer work stations, a network system, 6 photocopiers, and several pieces of presentation equipment for the Education Centers. Also, the Department of TT and D was the recipient of seven short-term consultancies. Additional information on each of these BEC inputs is provided later in this section.

Scope Of Work, Work Plans and Tasks

The scope of work for the evaluation team specified a number of areas related to teacher training. These were organized by the team members in the following ways:

(Goal 4) Improve the quality of the established teacher training system to prepare new and current teachers in using the new curriculum.

(Task 8) The extent and type of the preservice and inservice teacher training curriculum revision as a result of the changes in the basic education curriculum.

(Goal 2) Improve the quality of curriculum and instruction offered to primary and junior secondary students in the classrooms nationwide.

(Task 4) The extent of implementation of the curriculum through preservice and inservice teacher training.

Within the analysis of teacher training, a number of other goals and tasks were examined when their activities included components related to teacher training e.g. TT & D policy, short- and long-term participant training, inservice for education officers, the work of standing committees, and materials produced and published.

This section of the presentation of findings will deal with Teacher Training assistance provided by the BEC project. It will primarily focus upon the work of the Preservice and Inservice Advisors although other advisors and other assistance were also involved in Teacher Training activities, expansion, and improvement.

In the same vein, much of the work of the evaluation team that resulted in the information in this section was conducted by its teacher training member but, as is the case with the entire report, the entire team contributed specific information, analyzed the findings, and concurred in the conclusions.

Before discussing the events, the findings and the conclusions, the writer must address the nature of "assistance" and "advice" provided by the BEC project. The Department of Teacher Training and Development (TT&D) of the Ministry of Education is an ongoing fully functioning, though understaffed, unit with responsibility for multiple program in its two subunits - Preservice and Inservice Teacher Training. The advisors each had their own work plan and job descriptions that were driven by contracted project goals and objectives, as further defined by the needs assessment. In some cases, the specific task was assigned to an advisor for completion. In still other cases, the advisor played a minor, supportive role while others in the unit carried out the task. And, in other cases, other BEC or MOE educators had the responsibility or joint responsibility for the task. The writer is quite comfortable in discussing task completion and goal achievement without feeling, in every case, that credit must be tied to specific advisors for specific tasks. The advisors functioned in dual roles -- as members of the subunit within TT&D and as members of BEC. *It is to their credit that, often, these roles blended and became indistinguishable.*

Preservice Teacher Training

Major Department Activities -- 1992 - 1995

When BEC entered the picture in late 1992, the recently formed Department of Teacher Training and Development (established 1989) was, in fact, "consolidating" itself after several years of continuous development in Preservice Teacher Training.

Its four Primary Teacher Training Colleges (PTTCs) were producing quality teachers sufficient to meet the personnel needs of the primary schools and systematically reduce the numbers of untrained and expatriate teachers in those schools. Each of the schools had completed a self-study and was working on its own improvement agenda with assistance from the Department and other Ministry sources. Admission applications were exceeding intake by a greater than 10:1 ratio. One of the schools, Tlokweng, was about to initiate a Diploma in Primary Education program which would extend the two-year certificate program to three years, raise admission standards, and increase teacher salaries. At Tlokweng, particularly, but at all PTTCs to some extent, a systematic upgrading of the qualifications of lecturers was in process as those with diplomas were

working on first degrees and those with degrees were working on masters degrees. A number of innovations being tried out in the primary schools were being introduced into the teacher training curricula; these included the Project Method, Breakthrough to Setswana, CRT/continuous assessment, among others. An earlier joint Botswana/USAID project, PEIP, had been involved in assisting some of the development efforts in the training of primary teachers.

At the same time, teacher training for junior secondary teachers was now the focus at two Colleges of Education - Molepolole which had been established in 1985 and Tonota which opened in 1990 and graduated its first diplomates in 1993. They found themselves in similar conditions to those mentioned in the previous paragraphs -- a need to upgrade the qualifications of their lecturers, a need to "localize" i.e. reduce the percentage of expatriates, a need to conduct a self-study, and a need to build into their teacher training curriculum a number of the innovations being introduced into community junior secondary schools.

Furthermore, the teacher training system had grown in size and complexity as the number of schools, classrooms, and the resulting needed teachers were growing. What were once six somewhat separate training colleges under six administrators working for two departments needed to become systematized, to treat common problems related to growth, changing demands, and changing expectations, and to respond to the common leadership from one Department.

The BEC needs assessment conducted with the Department and the Preservice Unit representatives validated these needs and produced a work plan which committed the BEC project to work as a part of the unit on them.

As was mentioned in the context statement earlier in this report, the Department of Teacher Training and Development modified its plans and program in early 1994 to conform to the statements and policies promulgated in the Revised National Policy on Education and subsequent documents which built upon those policies. The BEC work plans were modified accordingly.

For the Preservice unit, however, the modifications were a matter of fine-tuning and nuances since many of its goals were already in line with the Revised National Policy. The major realignment of the unit and project goals was in the area of teacher training curricular modifications so that the program through which prospective teachers were trained was kept consistent with the modifications being made in the new 10-year Basic Education curriculum.

Again, in the same manner as discussed in other sections of this report, the tasks, goals, and outcomes for Preservice Teacher Training - both the unit and the BEC advisor - were once again modified when the decision to curtail the project as of September 30, 1995 was made.

BEC PRESERVICE GOALS, TASKS, AND OUTCOMES

The tasks, goals, and outcomes discussed below are an amalgamation of the tasks, goals, and outcomes specified in the Basic Education Consolidation Project Paper, September 20, 1991; the Project Grant Agreement between the Government of Botswana and the United States of America for the Basic Education Consolidation Project, September 23, 1992; the contract between USAID and the Academy for Educational Development, August 20, 1992; the Report of the Needs Assessment for Basic Education Consolidation in Botswana, September 10, 1993; work plans filed throughout the life of the project; BEC close out work plans; and the USAID/Botswana Assessment of Project Impact, Fiscal Year, 1995. In the opinion of the team, they represent the specific "terms of reference" that the BEC team and its Preservice advisor had in front of them. The tasks are specified in bold print; the activity of the team/advisor/department is discussed; and, following the presentation of the entire list, summaries, assessments and recommendations are described.

Conduct preservice needs assessment:

A comprehensive needs assessment was conducted by BEC project personnel beginning with a nationwide workshop involving teachers, lecturers, and Education Officers. Later a specific needs assessment was conducted for the Preservice unit. The list below contains outputs from both processes. The Preservice Advisor participated in the needs assessment process. The contract specified that the needs assessment process would be used to generate work plans and project tasks. The needs assessment activities did generate the work plans and tasks which are delineated and discussed below for the Preservice unit, some of which were modified when the close-out amendments were made to the Assessment of Project Impact documents. The needs assessment findings related to preservice included:

1. to bridge the gap between the training program of Primary and Junior Secondary teacher training institutions.
2. to introduce specialization in the PTTCs to address ability ranges and levels at the primary level.
3. to improve quality of instruction at the primary level by reducing teacher-subject ratio.
4. to integrate primary and junior secondary teacher training curriculum to ensure uniform quality of instruction.
5. to strengthen teacher preparation in the areas of recent innovations in the primary level of the Basic Education program.
6. to bridge the gap between the conditions of service of primary and junior secondary teachers.
7. to localize the professional staff of the CoEs.
8. to strengthen administrative capabilities of the colleges.
9. to develop research capabilities of the colleges.
10. to strengthen instructional resource capability of the colleges.

11. to enrich the training program of the colleges through short- and long-term training and study experiences.
12. to design a system of monitoring and evaluating the colleges including a data tracking and retrieval system.

Assist in the conduct of self studies for the COEs:

Self-study is a process used by institutions periodically to monitor their own behavior and improvement. The self-study process in Botswana was developed in the 1980's for use in the Primary Teacher Training Colleges and was modified for use with the junior secondary Colleges of Education. Prior to implementation of these modifications, the BEC preservice advisor worked with staff to introduce a more technical review team made up of subject matter experts rather than administrators. The self-study documents, trip reports for self-study activities, and a document reviewing the self-study process were reviewed by an evaluation team member. Self-studies, following the model in use by the TTCs, were conducted during the life of the project at both Tonota and Molepolole Colleges of Education. In each case, the preservice advisor and other members of the BEC/USAID team participated as reviewers.

Study Teacher Demand and Supply

The Preservice Advisor was involved in two Teacher Demand and Supply studies, one with the Department of Primary Education at a time when it first appeared that the PTTCs would certify more teachers than there were vacancies; the other as part of the planning processes in preparation for NDP VIII, in process during the evaluation team visit.

In this second effort, the Preservice advisor assisted lecturers seconded to TT & D from the two Colleges of Education, Molepolole and Tonota in the examination of teacher demand and supply at both the primary and junior secondary levels. One evaluation team member participated in discussions with the working group, examined the scenarios used to project future supply and demand, examined the presented data, and validated the work.

At the primary level, the production of the PTTCs have reduced the number of untrained teachers by 50% since 1985, virtually eliminated expatriates, and staffed the expanding number of schools and classrooms and decreased pupil-teacher ratios. Any "surplus", if and when it may occur, is being treated as a resource to be used to decrease class size, increase classrooms per school, free head teachers from teaching assignments, and release untrained and certificate teachers for further training.

Increase coordination, consultation, and communication among and between MOE units, e.g. TTCs, Centers, COEs, etc.

As the theme throughout the Ministry of Education appears to be the "three C's" of coordination,

consultation, and communication, it would be inappropriate for there not to be a BEC goal related to it. The problem, of course, is how does one "prove" or provide evidence that it is occurring. The presence of the Preservice advisor on national curriculum revision panels, the participation of the Inservice advisor on the planning committee for the 2nd National Conference on Teacher Education, or the involvement of personnel in school heads training or conference might be three ways to verify it. While no formal committee was created to monitor cooperation and the two advisors clearly had support roles within the department, the membership/participant lists of task forces, training cadres, national panels, writing teams, and focus groups do provide evidence that progress was made toward this goal.

This focus was also one of the primary motives behind the quarterly meetings planned by a joint committee and facilitated by BEC where representatives of the two departments (CD & E and TT & D) met together to discuss common goals, common problems, progress, and future plans.

2nd National Conference on Teacher Education

A national conference was held May 2 - 5, 1995 at the Molepolole College of Education that endeavored to bring together all teacher educators in Botswana to consider future directions in Teacher Training following the publication of Government Paper No. 2 in 1994 on the Revised National Policy on Education. Papers were invited from Botswana teacher educators which addressed all aspects of the topic. Almost 500 educators attended; 43 papers were presented.

The conference addressed a variety of themes. These included:

1. The Revised National Policy on Education: An Analysis and Implications for Implementation.
2. The 10-Year Basic Education: Philosophy and Implications
3. The 10-Year Basic Education: What was? What should be?
4. Preservice Issues and Solutions
5. Inservice Issues and Solutions
6. Teacher Incentives
7. School Effectiveness
8. Other Areas

The cost of the conference was shared by the Ministry of Education, the BEC project, the participants, and two local private firms -- MacMillan and Apple Centre. Both the Preservice and Inservice Advisors participated in the planning and operation of the conference.

An evaluation team member discussed the conference with both planners and participants, reviewed the agenda and materials, reviewed the evaluations, and the draft proceedings prepared by the preservice advisor, the conference committee, and a technical facilitator.

Produce and distribute the Management Manual to the TTCs

A Management Manual for the Teacher Training Colleges was written, produced and distributed during the life of the project. The process involved writers from each of the six institutions. The Principals themselves were leading authors and reviewers. The manual was reviewed by an evaluation team member. The seventeen-section manual was co-written by fourteen different lecturers and principals. The Preservice advisor coordinated the effort. A local firm, Panafrigue Management Consultants, participated in production. The fourteen educators who helped write the manual represented all four teacher training colleges and the two colleges of education. The manual presents information in the following categories:

1. Organization and Management
2. Code of Conduct for Staff and Students
3. Admissions/Transfers/Withdrawals of Students
4. Curriculum
5. Calendar
6. Clerical Administration
7. Teaching Practice
8. Outreach
9. Management: Finance and Supplies
10. Use of College Facilities
11. Graduation
12. Health and Safety
13. Physical Plant and Maintenance
14. Record Keeping and Reporting
15. College Evaluations
16. Management Tips
17. Managing Different Crises Situations

The initial reaction has been quite favorable. Dr. Tony Hopkin, the coordinator of the Board of Affiliated Institutions at the University of Botswana which oversees the certificate/ diploma granting process stated, "Those responsible for compiling the document have done a valuable and first class job. I am sure that officers in positions of responsibility will find the contents invaluable when carrying out their duties. . . . I have no doubt that this document will become a key factor in the management of teacher training colleges in Botswana."

Conduct the Primary Teacher Effectiveness Study

Evaluation team members had opportunities to discuss the Primary Teacher Effectiveness Study with the BEC consultant, Dr. P.M. Marope from the University of Botswana, attend a meeting of the study reference group, and examine her data. Her procedures, instrumentation, and analysis plans were reviewed and found both educationally sound and appropriate.

These members also reviewed a considerable portion of the raw data already collected. As this evaluation concludes, the remaining raw data has been collected and the analysis is concluding. It is opinion of the one team member who reviewed the raw data that this study, upon completion, will have valuable feedback and recommendations with implications for the teacher training processes at the TTCs as well as similar implications for the Inservice unit with the Department of Teacher Training and Development.

Revise the 3 year Junior Certificate curriculum for Colleges of Education and assure that all primary and secondary school teachers from the TTCs & COEs are trained in the basic revised curriculum

Activities related to the revision of the junior secondary curriculum from two forms to three are occurring in a number of groups and venues -- Gaborone, Tonota, Molepolole, etc. The BEC Preservice advisor was heavily involved in aspects of these revisions that were directly related to the teacher training functions. The activities and other actions include:

- a. national task forces formed for each of the courses within the preparation institutions (including U B), education officers from regional curriculum made up of representatives of the appropriate MOE units, teacher inservice units, teachers, et. al. Included in this work was the development of Guidelines for Syllabus Development by CD & E.
- b. focus groups which analyzed the 2nd National Commission on Education Report as approved by the National Assembly on April 7, 1994 and generated lists of goals and objectives for education and their implication for teacher training.
- c. work of the Division of Curriculum Development within CD & E which created curriculum blueprints which list and describe the philosophy, aims, and objectives of the 10-year Basic Education program.
- d. a task force on teacher training which worked to determine the teacher training needs, worked with other departments involved in the revision process, advised lecturers at the teacher training institutions, identified additional resources needed, and worked on collaboration necessary between inservice and preservice in this area.
- e. the development of a syllabus development process for the school curriculum and, as part of the Management Manual for Teacher Training Colleges, the teacher training curriculum as well.
- f. the development of a suggested college course format, and
- g. at each of the institutions, work by committees to develop and restructure the syllabi in accordance with the needs of the revised 3-year junior secondary program.

This work task suffered as a result of the truncation of the project and the alterations brought about by the Revised National Policy on Education. The revised curriculum syllabi were just being published as the project ended. Thus, neither the preservice nor inservice plans and changes which must follow the acceptance of the revised curriculum can be firmly in place. Since, in many cases, college lecturers served as members of the panels, the revisions of the teacher training program to conform to the curriculum revisions is currently in progress. Planning for the massive inservice that is needed, however, is just starting.

Conduct computer awareness training workshops for lecturers

In April 1995 46 Heads of Departments from Primary Teacher Training Colleges and the Colleges of Education attended a Computer Awareness Workshop at the Molepolole College of Education organized by the Preservice Unit and conducted by representatives of the Apple Center in Gaborone. This workshop was followed up by another eight day workshop for the 12 Lecturers who will be teaching a revised three-year Communication and Study Skills course that will include several units and activities related to the computer. An evaluation team member visited this second workshop, discussed their preparedness with the lecturers, and reviewed the plans.

At the same time as the second workshop, to more efficiently use the new equipment and network providing through the commodity part of the BEC project, training was also provided to both staff secretaries and lecturers in networking, data base development, data tracking, and other monitoring functions.

Develop a basic skills computer curriculum for the two colleges of education

The two-year Communication and Study Skills course offered by both Colleges of Education has been revised so that it is now a three-year offering and includes several units and activities -- during each of the three years -- related to the computer. As mentioned, Department Heads attended a computer awareness workshop in April; lecturers worked on the course revision; and the 12 lecturers who will be teaching the revised course returned for an eight day workshop in August.

Establish an "Evaluation and Management System" in TT & D -- Both Preservice and Inservice

The "evaluation and management system" conceptualized for the Department of Teacher Training and Evaluation is more than just a data base tied together with a "server" -- a unit of computer hardware enabling computers to talk with each other. It is, instead, a well thought out collection of forms, processes, and procedures -- automated to the extent possible that is consistent with departmental and national policy. The system, when fully operational, would conform to requirements in existing system e.g. policies and procedures in Financial Instructions and

Procedures, TSM/DPS guidelines, etc. This work plan task was not fully completed by the time of the BEC Evaluation Team visit. Several elements were completed and others were in process - the management manual discussed above, the teacher supply and demand study, data bases on college lecturers, data bases of teacher candidate test results, personnel evaluation procedures and forms, and a user requirement specification for a TT & D system-wide administrative information system developed by a BEC consultant. The return of an inservice education officer from study leave will speed the development of procedures from that unit within the department. Each completed element was reviewed by an evaluation team member and discussed with the BEC advisors, TTC/COE principals and staff, and TT & D personnel.

Assist in CRT and CA training courses for TTC lecturers

Under the direction of CRTIC -- a steering committee made up of representatives of the various units involved, training in continuous assessment and criterion referenced testing was provided to Principal Education officers, trainers from the five regions, and Standard V teachers. Specifics on number, location, and the nature of the training are discussed below in the Assessment section of this report.

Within the preservice unit of TT and D, a version of this training is also to be provided for teacher training college lecturers in January 1996 so that these lecturers can model and use the same principles as they teach in their preparation courses for the teachers. These experiences along with the revisions to the measurement/assessment course slated to be added to the teacher training curricula in PTTCs in this area were designed to deliver newly trained teachers to Botswana schools with both academic background and experience with continuous assessment and criterion referenced testing.

Revise teacher training curricula to include CRT and CA materials

Course materials for the Testing, Measurement, and Evaluation courses offered in Preservice teacher training program at Molepolole and Tonota were reviewed by evaluation team members. The syllabi contained units on both criterion referenced testing and continuous assessment. In addition, trainers from the teacher training institutions who are part of the training cadre working with Headmasters and Standard V teachers have conducted specialized workshop for students. At Tlokweng, for example, all current Year 2 and Year 3 students have, in addition to course units, received workshops in CRT/CA. Year 1 students will have their workshop this fall. In addition, the 1995 Final Teaching Practice students will all be placed in situations where CRT/CA must be used as part of their teaching experiences.

While lecturers in other fields have attended CRT/CA workshops similar to those offered to Standard V teachers, conducted both by the regional training cadres and by colleagues from within the institutions, they have not started, in any comprehensive way, to model CRT/CA in their own instructional activities.

Conduct formative evaluations of the Primary Pilot Diploma program and recommend the necessary changes for adoption of a 3 year diploma program in the TTCs.

A Task Force was put together to monitor and advise the Tlokweng and Teacher Training and Development Staff as the Pilot Diploma program progressed. The group included representatives from the Department of Primary Education, each teacher training college, and the University. The BEC Preservice advisor worked closely with the task force and Tlokweng staff throughout this process. A BEC consultant, Dr. George Urch, conducted an independent formative evaluation of the Diploma in Primary Education.

Materials related to the Diploma in Primary Education were reviewed by evaluation team members and discussions were held with the Preservice Advisor, TT & D education officers, and the Tlokweng Principal, department heads and lecturers. The July 1995 revision of the Diploma curriculum, the result of the formative evaluation of the Pilot efforts at Tlokweng since 1993, was the focal point for the analysis. The evaluation, analysis, and revisions were made as the Diploma program is slated for introduction at the Lobatse Primary Teacher Training College with the new class of students in the coming year. Later, the diploma program will be initiated at Serowe and Francistown and the certificate program will be completing phased out.

Summaries and Assessments

The previous section was an attempt to describe, factually, what processes, products, events, and activities occurred in the Preservice Unit or the teacher training institutions as a result of the BEC project and the BEC advisors. This section will describe the assessment of those "facts" by the evaluation team in direct response to the terms of reference (goals and tasks) of the scope of work, the assessment of project impact, and the various work plans. It will include statements of goals and tasks achieved or in process, goals and tasks not achieved, achievements and strengths identified, areas still in need of attention, and recommendations.

At the outset, however, the reader must understand that the overall assessment of the impact on Preservice Teacher Training by the BEC project is very positive. Its charge was to improve the quality of the established teacher training system to prepare new and current teachers in using the new curriculum (SCOPE OF WORK GOAL 4) and to improve the quality of curriculum and instruction offered to primary and junior secondary students in the classrooms nationwide (SCOPE OF WORK GOAL 2). While both of these goals describe continuous functions that will be ongoing, preservice education in 1995 is clearly in an improved state when compared with 1992. The factual presentation described above documents that statement.

A look at the twelve needs assessment findings would reveal that a number of them were either achieved or are currently 'in-process'. These would include:

1. to bridge the gap between the training program of Primary and Junior Secondary teacher training institutions.
2. to introduce specialization in the PTTCs to address ability ranges and levels at the primary level.
5. to strengthen teacher preparation in the areas of recent innovations in the primary level of the Basic Education program.
8. to strengthen administrative capabilities of the colleges.
9. to develop research capabilities of the colleges.
11. to enrich the training program of the colleges through short- and long-term training and study experiences.
12. to design a system of monitoring and evaluating the colleges including a data tracking and retrieval system.

At a policy level, all primary and junior secondary program are diploma level programs although it will take a few years to have all graduands with diplomas. Tlokweng TTC has already introduced specialization; Lobatse TTC will in the coming year. College lecturers have received training in all of the recent innovations and teacher training curricula have been revised to incorporate the concepts and skills. A management manual, a number of workshops, a automated management network, a self-study process, and a number of other activities have resulted in a strengthening of the administrative capabilities at the colleges, a process for monitoring and evaluating them, and a data system useful for those purposes. (Clearly, the latter needs much more work to be fully implemented.) The presentations of college lecturers at a research conference in February 1995, at the 2nd National Conference on Teacher Education and at the 1995 Boleswa conference has documented the increased research capabilities at the colleges. Finally, the number of lecturers who have profited from short- and long-term training as well as in-country short courses is well documented.

Some of the needs assessment findings, while gaining some attention and focus, were not realized. These include:

3. to improve the quality of instruction at the primary level by reducing teacher-subject ratio.
4. to integrate primary and junior secondary teacher training curriculum to ensure uniform quality of instruction.
6. to bridge the gap between the conditions of service of primary and junior secondary teachers.
7. to localize the professional staff of the CoEs.
10. to strengthen instructional resource capability of the colleges.

Specialization may help with the first but teachers are still being trained in 12 curricular areas. It is the announced intention of the Department of Teacher Training and Development that primary and junior secondary teacher training will take place "under one roof" but the planning process has

not started as yet. Note: Of the five listed above, only 7. appeared in project documents as an intended outcome -- in this area, improvements occurred but Batswana lecturers still make up only half of the CoE lecturers.

The scope of work requested as assessment of the extent and type of the preservice teacher training curriculum revision as a result of the changes in the basic education curriculum. The team found that much work has been completed in this area even though the revised basic curriculum has not been fully approved by Ministry of Education processes. College lecturers from each of the six institutions had the advantage of being on national curriculum task forces doing the curriculum revisions. Thus, they were able to work on revision of teacher training curricula at the same time that they work on revision of the Basic Education curricula. In addition, the college have already adapted their program or will introduce newly revised courses the next term in several of the areas of non-course innovations -- CRT/continuous assessment, Breakthrough, Project Method, computer literacy, etc.

The evaluation team was also requested through the scope of work to assess the extent of implementation of the curriculum through preservice and inservice teacher training. As stated earlier, very little actual implementation has taken place as of September 1995 since the newly revised curriculum is just now being approved.

Achievements and Strengths

Preservice teacher training in 1995 has the following products, processes, and capabilities which it did not have in 1992. While in each case, the BEC project had a role in its realization, it is true, in every case, that the primary impetus and work was provided by the Batswana teacher educators themselves.

1. A self-study process usable at both primary and junior secondary teacher training institutions.
2. A Management Manual for the Teacher Training Colleges.
3. A teacher training curriculum closely tied to revisions and innovations found in the school program.
4. A Diploma in Primary Education program already operating at one institution and plans for its implementation at all others.
5. An extremely computer literate headquarters and CoE staff.
6. The beginnings (equipment, prototypes, manuals, and initial training) of an Evaluation and Management network among the teacher training institutions and the Department of Teacher Training and Development.
7. A way of work that enables representatives of the various departments within the Ministry, the teacher training institutions, the Inservice unit, and the schools to cooperate, collaborate, and communicate to improve education in Botswana.

Areas Still Needing Attention

In the opinion of the evaluation team, no significant goal or work task, in the area of Preservice teacher training was unaddressed or undone. There are, however, a number of areas which still need work and attention. Some of these were in process at the time of the evaluation and simply needed more time; others were also in process but needed attention, work, or activities.

The management, monitoring and evaluation system is clearly one area that simply needs time that the truncation of the project did not provide for. Manuals and procedural materials exist, the equipment was being put in place as the evaluation was conducted, the training of staff was in process, prototypes had been developed, etc. The work done to the point of project termination was cited as a strength; the work to be done after project termination will determine how much of a strength this new capacity actually becomes.

The project has provided for increased computer capabilities at each TTC and CoE as well as increased computer usage among the lecturers. It is obvious and observable at MCOE and TCE where equipment is present, used for administrative, instructional management, and student awareness but such is not the case at the TTCs. There, the equipment has not arrived; lecturers have had one "awareness" workshop which, since it occurred months before the equipment arrived, may have to be repeated, and no plans for including it in the teacher training curriculum currently exist.

A major thrust of the Ministry of Education during the life of the BEC project has been its work in continuous assessment and criterion-referenced testing -- all Standard V teachers and headmasters have received training, one course at the CoEs has been revised to include understanding of the concepts, and extensive inservice efforts are planned. While individual lecturers are among the trainers and one TTC has provided an awareness session for its lecturers, continuous assessment and criterion-reference testing is not currently being modeled in the courses and program of the college lecturers. If such continues, Botswana will always have to provide inservice in these areas.

Localization is not an issue that will be easily solved. It simply must be kept in front of policy makers and every opportunity pursued to increase the presence of Batswana as lecturers in teacher training institutions. The sixteen long-term training experiences provided by BEC plus the 23 provided by the Ministry and the 15 provided by non-governmental organizations will continue the movement toward localization.

Integration of primary and junior secondary teacher training is a goal that has been discussed for the past few years and work during the life of the BEC project did provide increased knowledge and understanding of opportunities and issues related to it. Currently, it seems to have as many definitions as it has advocates and antagonists. Continued efforts to refine the concepts and identify achievable goals must be pursued. A good first step would be to find ways to introduce

activities and behaviors related to the articulation between Standard 7 and Form 1.

Inservice Teacher Training

Major Department Activities -- 1992 - 1995

Ten years ago, inservice teacher training was a function carried out through several Ministry departments as innovation or needs arose associated with some other activity of that department that had need for professional development or informational activities with practicing teachers. At the primary level, two Education Centers existed; at the secondary level, inservice was provided through the Department of Secondary Education with education officers housed in Gaborone and in some regional offices.

By 1992, inservice was a unit within the Department of Teacher Training and Development operating through eight Education Centers -- two new ones were established in 1988; the other four in 1990, some of which work at both primary and secondary levels and six regional inservice offices which provided assistance in subject areas and at the secondary level. During the life of the BEC project, the unit would grow to encompass 12 Education Centers, eleven complete with residences for officers and hostels for participants, and increase significantly the number of education officers, inservice coordinators, and teacher advisors available to Batswana educators and schools. A listing of the Centers and regional offices was provided earlier in this report.

As with any administrative unit undergoing rapid growth, its personnel need training, its system needs consistent policy and procedures, it and the schools it serves need an agreed upon vision of expected services, its processes and activities need to be researched and validated, its services need to be expanded and brought into line with system-wide goals, and others need to be informed about how to use and work within the system.

The BEC needs assessment conducted with the Department and the Inservice representatives validated these needs and produced a work plan which committed the BEC project to work as a part of the unit on them.

As was mentioned in the context statement earlier in this report, the Department of Teacher Training and Development modified its plans and program in early 1994 to conform to the statements and policies promulgated in the Revised National Policy on Education and the subsequent documents which built upon those policies. The BEC work plans were modified accordingly.

The unit acquired both regional and national inservice activities related to the Revised National Policy on Education -- planning, delivering, and evaluating those activities. Inservice providers, regardless of the level of focus (pre-primary, primary, secondary, vocational, etc.), for the first time had common expectations thrust upon them and needed to meet and work together to clarify "ways of work." Continuous assessment and with it, criterion reference testing, became an important focus as also did the upgrading of personnel throughout the system and coordination,

consultation, and communication with other units in the effort.

BEC Inservice Goals, Tasks and Outcomes

The tasks, goals, and outcomes discussed below are an amalgamation of the tasks, goals, and outcomes specified in the Basic Education Consolidation Project Paper, September 20, 1991; the Project Grant Agreement between the Government of Botswana and the United States of America for the Basic Education Consolidation Project, September 23, 1992; the contract between USAID and the Academy for Educational Development, August 20, 1992; the Report of the Needs Assessment for Basic Education Consolidation in Botswana, September 10, 1993; work plans filed throughout the life of the project; BEC close out work plans; and the USAID/Botswana Assessment of Project Impact, Fiscal Year, 1995. In the opinion of the team, they represent the specific "terms of reference" that the BEC team and its Inservice advisor had in front of them. The tasks are specified in bold print; the activity of the team/advisor/department is discussed; and, following the presentation of the entire list, summaries, assessments and recommendations are described.

Conduct Inservice needs assessment

A comprehensive needs assessment was conducted by BEC project personnel beginning with a nationwide workshop involving teachers, lecturers, and Education Officers. Later a specific needs assessment was conducted for the Inservice unit. The list below contains outputs from both processes. The Inservice Advisor, through not as yet in country as a member of the long-term staff, participated in the needs assessment for a three week period in February 1993. She arrived on post later that year -- July 1993. The contract specified that the needs assessment process would be used to generate work plans and project tasks. The needs assessment activities generated the work plans and tasks which are delineated and discussed below, some of these work plans were modified when the close-out amendments were made to the Assessment of Project Impact documents. The needs assessment findings in the inservice arena include:

1. to state and clarify the philosophy of basic education and its curriculum implications so that everyone involved should contribute and be committed to making the program a success.
2. to unite inservice teams so that they are not fragmented.
3. to strengthen the quality of inservice offered to primary and secondary schools.
4. to establish a program of staff development in every school.
5. to establish inservice training policy.
6. to increase the effectiveness of the Education Centers.
7. to enhance job satisfaction, motivation, positive attitude, efficiency, and increased productivity amongst teachers through recognized continuing education program.

Assist in the delivery of inservice activities across the nine (now 10) years of Basic Education

including:

1. a review of the structure of inservice delivery systems,
2. assist in the coordination of inservice training activities,
3. provide training in CRT/continuous assessment,
4. assist with the Commonwealth Secretariat Training, and
5. develop an annual inservice calendar planning process.

During 1994, the Inservice Unit conducted 438 different inservice functions through eleven different Education Centers. These activities were attended by 15908 participants -- mostly teachers.

Table I

Centre Based Activities For 1994

Location	Activities				Total Participants
	Totals	Primary	Second	Other	
Mochudi	35	18	10	7	1052
Molepolole	42	20	9	13	1493
Lobatse	17	8	9		772
Serowe	27	23	2	2	813
Kasane	19				4104
Tlokweng	101	47	19	35	2715
Gantsi	38	14		24	1032
Tsabong	23	23			465
Francistown	20	14	6		860
Maun	46				1202
Selibe Phikwe	70				1400
Totals	438	167	55	81	15908

Review the current structure of the inservice delivery systems at the Education Centers

The Inservice advisor visited each Education Center at least twice during her tenure at TT & D using interview protocols, informal observation techniques, and participatory activities to review the structure and delivery systems at those Centers. No report was written. One of the BEC Evaluation Team members reviewed her field notes and discussed with colleagues -- both at TT & D headquarters and in the Centers -- and determined that information gathered through these visits was used by the advisor in her day-to-day activities.

Assist in the Coordination of inservice training activities for teachers delivered by other MOE departments, e.g. curriculum revisions, continuous assessment, and CRTs

Inservice teacher education has been the responsibility of the Inservice unit of the Department of Teacher Training and Development since 1989. However, inservice activities are being delivered by a variety of agencies and department, in some cases, with little or no involvement with TT & D. The reasons are many and obvious; TT & D and its Centers do not have adequate staff; other departments have the expertise needed to effect the training; several "agendas" are operating; etc. The Ministry and the department have, in the last three years, been making a concerted effort to centralize all inservice under the coordination of TT & D. The BEC team was involved in several such efforts -- CRT and continuous assessment training, the inservice providers conference, the 2nd National Conference on Teacher Education, curriculum revision training, computer awareness training, and distance learning efforts.

Provide Training in CA and CRT

Under the direction of CRTIC -- a steering committee made up of representatives of the various units involved, training in continuous assessment and criterion referenced testing was provided to Principal Education officers, trainers from the five regions, and Standard V teachers. Specifics on number, location, and the nature of the training are discussed below.

The Education Officer in TT & D responsible for working with the ERTD team in this area has worked in preparation for the time when the Inservice Unit will assume responsibility for training. In 1995 - 96, 700+ teachers (one for each primary school in the country) will be trained as trainers with responsibility for disseminating information and training to their school colleagues. Thus, by the end of the coming school year, every primary school will have a teacher trainer, its Standard V teacher(s), and its headmaster having received training in CRT.

BEC assistance in this effort was provided primarily through its Student Assessment

Advisor. The Inservice Advisor provided informal assistance within TT & D and conducted follow-up visits to 37 schools to observe activities related to the several of the major inservice thrusts including CRT.

Commonwealth Secretariat School Heads Training Project

During the period from May through the end of July 1994 817 of the 850 primary and secondary school heads participated in a three day training program in school management. The Inservice advisor served as a member of the Steering Committee, provided advice, helped design and conduct the training of trainers activities, participated in the planning process, and drew conclusions which she found useful in carrying other "nationwide" training activities.

Develop an annual inservice calendar planning exercise which includes both primary and secondary inservice activities and those of other relevant MOE Departments

As the number, nature, and complexity of inservice activities increased, the demands on school personnel time, the difficulty in scheduling qualified trainers, and the limited venues availability for large group training necessitated effort to build schedules and plans well in advance of events. In November, 1993 and again in April, 1994 planning seminars were conducted to provide opportunities for inservice providers to predict training and meeting needs for the subsequent calendar years. These "annual inservice calendar planning exercises" were quite helpful even though meetings were still canceled, venues were moved, and priorities changed. For the most part, the calendar held up.

As the project ended, the unit, responding to RNPE directions, was, however, moving away from national planning and emphasizing, instead, calendar building at a Center or region level. At the same time, planning is taking place for the new National Development Plan VIII which will lay the groundwork for subsequent planning efforts.

Strengthen Training Capabilities of Inservice officers by:

1. training inservice officers and
2. assisting Breakthrough teacher advisors

Additional information about BEC activities to meet this goal can be found below when long- and short-term training are discussed.

Train Inservice Officers via short courses and consultation

Inservice Providers Professional Development Seminar
30 January - 3 February 1995

A national conference that brought together virtually all inservice providers in the country was held January 30 - February 3rd, 1995 at the Kasane Education Center and Mowana Lodge. A national planning committee under the direction of the Principal Education Officer for the Inservice Unit, Ms. K. Motlotle was assisted by the BEC Inservice advisor and two BEC consultants, Drs. Judith Warren Little, University of California, Berkeley, and Linda Pursley, Cornell University.

The seminar had as its objectives for the participants:

1. enhance their technical skills,
2. build a stronger pattern of collegial support,
3. build a more cohesive team that spans primary and secondary levels,
4. acquire a picture of the entire inservice system,
5. assessment of problems and challenges they face, and
6. increase confidence in their ability to impact teachers and heads.

This seminar was successful, in part, due to the progress of the inservice unit toward national system development including the building of an infrastructure for inservice delivery, and in building the capacities of individuals and groups.

An evaluation team member discussed the conference with both planners and participants, reviewed the agenda and materials, reviewed the evaluations, read the consultancy report and the final report prepared by the unit staff.

Inservice Assistance for Breakthrough Teacher Advisors

Several training sessions on various topics were conducted by the Inservice Advisor for the Breakthrough/Project Teacher Advisors. Areas included formal training in Clinical Supervision and language acquisition as well as informal activities involving problem solving, planning and manual/materials production.

Strengthen Infrastructure base for Inservice activities by:

1. developing an inservice manual,
2. enhancing resources at Education Centre Libraries,
3. establishing a monitoring and evaluation system, and
4. increasing collaboration among and between MOE units.

The strengthening of an organization's infrastructure has the capability of increasing its capacity

to deliver on its objectives. When such strengthening is accompanied, at the same time, with an increased capability of staff -- through short- and long-term training and inservice training and an increased capability through equipment, that organization has an excellent opportunity to improve itself. BEC was charged with doing these three things for TT & D -- increase the capability of the personnel, strengthen the infrastructure, and provide necessary materials and equipment. The provision of short- and long-term training as well as the commodities and consultancies are discussed later in this section. Inservice activities for inservice providers was discussed earlier.

Develop an Inservice Manual

The discussions about an Inservice Manual began near the beginning of the BEC project and continued throughout. Initially conceptualization of the "manual" could have been described in several different ways. These included:

(1) a revision of the Education Center Guidelines, created in 1991, (2) a procedural kit, (3) a four part topical collection, (4) the work of a British consultant, (5) the work of the BEC Inservice advisor, (6) written by education officers in the field, and (7) probably a few more characteristics that were not identified.

The current state is that an informative BROCHURE, not a manual, describing the 11 1994 - 95 Centers has been produced by a group including the BEC advisor and representatives of the Education Centers. A committee of three education officers have a draft of a manual ready for review by TT & D and, conditional on approval, editing and publication.

Enhance Resources of Education Center Libraries

A four month training/technical assistance consultancy was provided during April - July 1995 which served as a catalyst to spur greater cooperation among the Education Centers, the Botswana National Library Service, and the University of Botswana. One week's training was provided at each of the 11 Centers in operation at that time. The training included:

1. basic library maintenance skills,
2. collection enhancement, and
3. skills and abilities to meet site-specific problems.

Materials related to the work at the Education Center Libraries were reviewed by the evaluation team, two libraries were visited, and observations made of their collections and work.

Establish a system for monitoring and evaluating Inservice Program

As is true with the data base discussion below, no system for monitoring and evaluating inservice program exists but several elements have been developed and are in use. As the automated systems get developed, tested and used, their availability for monitoring, record keeping, and evaluation increases.

Early on in the project, the advisor met with a team of Education Center directors to develop a common report writing format which is now in use. Similarly, the unit developed procedures for evaluation of each training workshop or seminar and utilized subject field needs assessments (secondary) as data appropriate for planning purposes.

At some time in the future, unit education officers foresee an automated record keeping/data base which will assist the unit in monitoring the involvement of trainers and trainees in the various inservice activities available. BEC has provided the hardware for each Center and the headquarters, has supported a network specification consultancy whose report is completed, and has trained education officers to participate in its development and, ultimately, its use.

Increase coordination, consultation, and communication among and between MOE units, e.g. TTCs, Centers, COEs.

As the theme throughout the Ministry of Education appears to be the "three C's" of coordination, consultation, and communication, it would be inappropriate for there not to be a BEC goal related to it. The problem, of course, is how does one "prove" or provide evidence that it is occurring. The presence of the Preservice advisor on national curriculum revision panels, the participation of the Inservice advisor on the planning committee for the 2nd National Conference on Teacher Education, or the involvement of personnel in school heads training or conference might be three ways to verify it. While no formal committee was created to monitor cooperation and the two advisors clearly had support roles within the department, the membership/participant lists of task forces, training cadres, national panels, writing teams, and focus groups do provide evidence that progress was made toward this goal.

Establish information base for all inservice activities through:

1. conducting effective studies and
2. developing a data base among inservice providers.

Conduct effectiveness studies

Breakthrough/Project Method

A comprehensive study of Breakthrough to Setswana activities was conducted by Alan Peacock. In addition, the Inservice advisor worked with the Breakthrough/ Project Unit to collect data on training effectiveness and the utilization of the methods following training. Between September, 1993 and August, 1994 the advisor visited seven Education Centers and 17 schools where she observed activities in 40 classrooms, conducted 48 interviews and observed or participated in training for 382 teachers and officers. Again, as reported earlier, no formal report was written but the feedback given to Breakthrough staff and the teacher advisors was well used and well received. One area where her data was most useful were the attempts to describe the promoting and prohibiting environmental factors that she observed in those schools.

Develop a data base for TTD that links TTCs, COEs and the inservice unit.

This is one of the areas that appears to be most affected by the early termination of the project. The equipment that will enable consistent and widespread use across a network that links the six teacher training institutions, the six regional inservice centers, the Education Centers and inservice delivery sites, and the Department of Teacher Training and Development is just now "arriving." Other non-networked equipment has been used to develop elements and examples of what could be done; those samples exist and were reviewed.

Develop and implement a policy for incentives for Inservice program and activities

This is a topic that seemed to appear and reappear in each semi-annual work plan, in field notes, in minutes of meetings, and throughout the tenure of the advisor. In May-June, six educators, including the PEO/Inservice, participated in a short-term training program sponsored by the BEC project. The study tour of several United Kingdom institutions had as its main focus the use of distance learning options and the provision of credit bearing incentives for inservice program and activities. While little came of it during the project, it now appears that arrangements, started as a result of the study tour and an earlier short-term training program at Northern College in Aberdeen, Scotland by the Principal Education Officer/Inservice, have an opportunity to try out and pilot credit-bearing incentives in a new training effort providing university credit for a series of training modules and other activities associated with a new round of Commonwealth Secretariat training.

Summaries and Assessments

The previous section was an attempt to describe, factually, what processes, products, events, and activities occurred in the Inservice Unit, the Education Centers and inservice regions, and in other inservice experiences as a result of the BEC project and the BEC advisors. This section will describe the assessment of those facts by the evaluation team in direct response to the terms of reference (goals and tasks) of the scope of work, the assessment of project impact, and the various

work plans. It will include statements of goals and tasks achieved or in process, goals and tasks not achieved, achievements and strengths identified, areas still in need of attention, and recommendations.

At the outset, however, the reader must understand that it will be to his/her disadvantage to attempt to compare the assessment shared earlier of the Preservice Unit with that given below for the Inservice Unit. Not only do the two units work very differently under the direction of the Department CEO, the venues, needs, and goals are even more different. Furthermore, the two advisors, true to their own individual styles of work, were quite different in the way they attempted to impact the two units. To the evaluation team, they were each effective in meeting their terms of reference and work plan goals.

The key to the earlier assessment was continued improvement of structure and systems already established. The key to understanding the last three years in the Inservice Unit seems to be consolidation -- bringing together a number of existing systems under the leadership of the PEO/Inservice and the Department of Teacher Training and Development. While this effort was made more difficult by the several changes in personnel at both the PEO and CEO levels, the "facts" accumulated by the team seems to verify that consolidation has occurred or, more accurately, is occurring.

Again, as earlier, the charge for the BEC project was to improve the quality of the established teacher training system to prepare new and current teachers in using the new curriculum (SCOPE OF WORK GOAL 4) and to improve the quality of curriculum and instruction offered to primary and junior secondary students in the classrooms nationwide (SCOPE OF WORK GOAL 2). The factual presentation described above documents such improvement.

A look at the needs assessment findings would reveal that a number of them were either achieved or are currently 'in-process'. These findings (all those presented below are direct quotes from the Needs Assessment Report, September 10, 1993) would include:

2. to unite inservice teams so that they are not fragmented.
3. to strengthen the quality of inservice offered to primary and secondary schools.
5. to establish inservice training policy.
6. to increase the effectiveness of the Education Centers.

Inservice providers, previously housed in a number of settings and Ministry departments are now not only under the Department of Teacher Training and Development but will soon be housed, both primary and secondary, jointly in the various Education Centers. The sheer number, complexity, and participants involved in the inservice activities over the last year would document the strengthening of inservice quality. Finally, Education Centers are improved -- increased personnel enabling a more responsive service, better trained personnel, better instructional

resources, and extensive plans for increased utilization.

Some of those needs assessment findings were not measurable, were not pursued, or were not realized. These include (again, quotes from the 1993 Needs Assessment findings):

1. to state and clarify the philosophy of basic education and its curriculum implications so that everyone involved should contribute and be committed to making the program a success.
4. to establish a program of staff development in every school.
7. to enhance job satisfaction, motivation, positive attitude, efficiency, and increased productivity amongst teachers through recognized continuing education program.

The fourth needs assessment finding is a goal which the department and unit is pursuing; has prepared some of the groundwork, has plans for implementing; and, one day, will achieve. Some work was done during the project life in that direction but much remains to occur before Botswana will have a school-based program of staff development in every school.

While the first and seventh findings are laudable, were discussed in retreats and seminars, and are important ancillary results to inservice work, neither were directly pursued through work plans nor are assessable as a result of project or unit activities.

From the beginning of work on this project, the project paper and the original contract, a goal of providing over 400 different formal inservice events is stated and repeated. The data providing to the team, the 1994 portion of which is shared above, demonstrates that this benchmark was achieved. In 1994, 438 different inservice events involving more than 15,000 school teachers and other educators were conducted under the auspices of the Department of Teacher Training and Development's Inservice Unit. While, clearly, this was the work of the Botswana educators who operate the Centers and regions, who train the trainers, who endorse and enable the events, etc., it is also an achievement that the project can share.

The scope of work requested that the team assess the extent and type of the preservice and inservice teacher training curriculum revision as a result of the changes in the basic education curriculum (Task 8) and the extent of implementation of the curriculum through preservice and inservice teacher training (Task 4). The evaluation team is hampered in making this assessment by the timing of the completion of the curriculum revisions -- some are already complete; seven are complete as of August, 1995 but not yet approved nor distributed; and seven more are due for completion by the end of 1995. It is hard to assess the changes in the inservice program between 1992 - 95 based upon curriculum revisions not yet enacted.

We can, however, assess the changes in inservice delivery of many national innovations not associated with a subject matter or grade level syllabi. The work, for example, that CD & E, ERTD, and TT & D collaboratively accomplished in the development of training materials,

training of over 80 trainers, and training of all Standard V teachers and school headmasters in continuous assessment/criterion-reference testing. Similarly, the continued work in Breakthrough to Setswana training that has been revised and modified to conform to the Revised National Policy on Education and the changing policies of the Ministry of Education.

Achievements and Strengths

The Inservice Unit of the Department of Teacher Training and Development has grown, developed, and consolidated over the past three years. It has responded to various demands from other Ministry departments as well as from its own Center and regional officers and provided inservice in curricular, instructional, measurement, guidance and counseling, AIDS, and other areas.

1. The number, nature and extent of current inservice offerings.
2. The success the unit has achieved in moving toward combined Inservice regions and Education Centers under one roof.
3. The level of consultation, collaboration, and communication with other Ministry departments that have needs or demands related to Inservice training.
4. The efforts to upgrade the Inservice providers, both the education officers in the Centers and regions and the individuals who provide training for given inservice purposes.
5. The development of an overall inservice training policy for the country.
6. Plans to move toward school-based staff development as one part of an overall country plan.
7. The increased percentage of Batswana educators serving as Secondary inservice officers.

Areas Still Needing Attention

Inservice activities almost always demand extra time, extra effort, travel, or other inconveniences. Furthermore, changes resulting from those activities demand additional time and work on the part of the educator who is trying to implement the new ideas in his/her work assignment. Incentives for involvement in such work are needed. The efforts by the unit over the past three years and the plans with the Commonwealth Secretariat to work with a UK institution for this purpose should be extended and encouraged.

Data from field notes from the studies and visitation of the inservice advisor and the BEC consultant indicate that care must be taken in the selection of teachers as school-based trainers. While the cascade/multiplier process of using a training of trainers model is the only one appropriate for Botswana's current inservice needs, its success will be based on the quality of training provided by that school-based teacher. Inservice program using this model must provide training in training as well as the training in the content of the inservice.

As is true with the preservice unit, the Inservice Unit is understaffed for all the inservice needs that it is attempting to fill. As a service agency, making some decisions on its own but, for the most part, providing assistance to others who have inservice needs, some mutually agreed upon (at the Ministry or across department level) process for priority setting is needed.

The efforts toward school-based staff development are appropriate, outstanding, and need to be

vigorously pursued.

As the Inservice unit works to meet needs established for itself by other departments and agencies within the Ministry it must not neglect inservice needed by its own agencies and personnel - that is, TT & D, TTCs and CoEs personnel need a staff development program and plan.

A massive information and awareness training for the revised curriculum is the obvious next major project confronting the Inservice Unit. Planning for that training, already started to some degree, must be intensified.

Moe Staff Development

Goal 6. Strengthen the educational service capacity of the MOE through short- and long-term training.

Task 6. To assess the extent and type of in-house staff training provided to EOs by BEC advisors and consultants, and the effectiveness of the EOs in implementing their training.

Task 7. To assess short-term and long-term training, both in-country and international, and the appropriateness of this training for the positions held.

Task 14. To assess the impact of short-term and long-term training on the job performance of Education Officers.

Teacher Training Tasks

Provide in-house staff training for Education Officers

The team was able to review individual professional development plans that the advisors worked out with TT & D Education Officers as well as training program agendas for assisting the headquarters personnel in acquiring skills to use the 12 computer work stations provided by the project. The inservice advisor according to reports from Education Center personnel and other inservice officers worked informally with staff, produced useful forms and materials, and assisted them with improved techniques.

Advise on preservice long and short term participant training program

The Preservice advisor provided informal assistance to Ms. Rebecca Mphahudi, the short/long term training officer, as she managed the selection of MOE staff -- from Ministry funds as well as other donor sources. A listing of participant fields and current positions follows.

Long-term

Mrs. K. Arabang	Masters	Ohio University
Mr. J. Botshelo	Masters	U/Nevada
Mr. C. Didmalang	Masters	U/Nevada
Mr. D. Gotsileng	Masters	U/Nevada
Mr. Abel Manatsha	Masters	U/Kentucky
Ms. Bridget Matenge	Masters	Georgia Southern
Mrs. M.B. Mmopi	Masters	U/Nevada
Mr. S. Moate	Masters	U/Nevada
Mr. H. Moepi	Masters	Ohio University

Mr. M. Mogapi	Masters	U/Nevada
Mrs. E. Motshaba	Masters	U/Pittsburgh
Mr. L. Serumola	Masters	U/Nevada

The short-term training program for six representatives of Preservice teacher training including the department CEO and the Acting PEO/Preservice which took place in Singapore in early 1995 was planned and facilitated by the Preservice Advisor. This program focused on various aspects of management of teacher training institutions and their improvement. The advisor also assisted in a short-term training program with Herbert Kohl and tertiary institutions in New York.

Short-term

Mr. G. Gobotswang Kohl - Ca. & NY	Study Tour
Mr. L. Kopong U/Mass	Leadership
Mr. J. Matthiessen Kohl - Ca. & NY	Study Tour
Mrs. H. Mogami Singapore	Study Tour
Mr. Rakgadi Mogana Norway	Special Ed
Mr. M. E. Molefe U/Massachusetts	Tertiary Ed
Ms. T. Mongatane Kohl - Ca. & NY	Study Tour
Ms. Lydia West Norway	Special Ed

Advise on inservice long and short term participant training program

The Inservice advisor provided informal assistance to Ms. Rebecca Mphahudi, the short/long term training officer, as she managed the selection of MOE staff -- from Ministry funds as well as other donor sources. Although not part of the BEC Participant Training Committee, the Inservice advisor played a direct role in facilitating the process of identifying and selecting participants supported by BEC funds.

She was directly involved in planning (including accompanying the group) with the Inservice Unit, the short-term training visit to the United Kingdom. This visit was directly related to efforts to create distance learning and extension/incentive degree and credit-bearing opportunities as part of the inservice program. Reviews and trip reports of the short-term training were reviewed by team members; long-term participants were also interviewed. A listing of participant fields and current positions follows.

Long-term

Mr. Chris Bushang Ohio University	Masters
Mrs. S. Nkoane U/Mass	Masters
Mrs. C. Oaitse U/Mass	Masters

Mrs. R. Wigget	MastersOhio University
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Short-term

Mrs. E. Chezeri	Study Tour
United Kingdom	
Mrs. D. Dabutha	Study Tour
United Kingdom	
Ms. L. Matshameko	Study Tour
United Kingdom	
Mr. M. Matsetse	Study Tour
United Kingdom	
Ms. K. Motlotle	Study Tour
United Kingdom	
Mr. C. Palai	Study Tour
United Kingdom	

Specific to teacher training, 14 of the 23 short-term training experiences were provided for TT & D headquarters personnel, teacher training lecturers/principals, and Education Center officers. Among the long-term participants, 16 of the 24 training experiences were provided to TTC and CoE lecturers, a TT & D headquarters officer (inservice/media), and three Education Center officers. The recipients have returned or will return to Botswana with advanced degrees and increased preparation in their field. One of the evaluation team members has reviewed the progress toward degrees (courses taken/grades received) of all long-term participants as well as the trip reports for the short-termers -- useful experiences in special education, incentives for inservice, management of inservice activities, and administration of tertiary institutions.

Table II

BEC Long-Term Training Participants

Area of Study	Number
Special Education	1
Guidance and Counseling	2
Art Education	1
Education Administration	1
Curriculum Studies	11
Educational Media/Inst. Technology	3
Research/Ed Measurement	5
Total	24

Current Assignment of Long-Term Participants

Teacher Training Colleges	12
Inservice Unit	3
TTD Inservice Unit (HQ)	1
Secondary Education	1
Research & Testing Center	3
Guidance and Counseling	1
Curriculum Development	2
Teaching Service Management	1

Table III

Bec Short-Term Training Participants

Education Measurement/Assessment	3
Art Education	1
Program in Computer Applications	1
Management of Tertiary Institutions	2
Special Education	2
Education Policy and Planning	1
Physical Education	1
Study/Observation Tours	12
TOTAL	23

Current Assignment of Short-Term Participants

-

Teacher Training & Development (HQ)	2
Teacher Training Colleges	7
Inservice Unit	5
Research & Testing Center	5
Curriculum Development	4

Summaries and Assessments

The basic question for the BEC evaluation team is, "Did the use of short- and long-term training experiences provided by the project strengthen the education service capacity of the Ministry?" As a part of that response, the team must also look at extent and type of in-house staff training provided to EOs by BEC advisors and consultants, and the effectiveness of the EOs in implementing their training, its appropriate for the positions held, and the extent to which the training benefited the officers.

There is plenty of evidence that short-term training, two-thirds of which was provided for personnel in teacher training, was productive and that the education officers upon their return have been making use of information and skills acquired. Plans and activities are currently in process that can be directly linked to the topic and substance of the short-term training.

However, the team has a difficult time doing an assessment that responds to the above question, specifically related to long-term training, due to the circumstances and timelines associated with long-term training. We can verify that the training did occur or is occurring; we can verify that the trainees, who have completed their training, were successful -- they obtained their degrees or planned ways to use their learning; and we can substantiate the appropriateness of the selection of trainees in terms of the plans the Ministry has for them upon completion. We cannot do more because, in fact, most of the long-term training is just now being completed or will be completed with Ministry support subsequent to the termination of the project. We cannot assess what has not occurred.

The team can only speculate why selection of long-term training participants did not occur earlier in the project and what effect, if any, the truncation of project activities had upon that process. Clearly, the Ministry sees value in those selected and the training they are receiving and comments indicate a realistic plan for their use. Their continuation of support after the life of the project is a forthright statement of support for the training component.

Project Related And Project Generated Outputs

Task 5. To assess the proficiency of Education Officers in the use of project-provided commodities such as computer and video equipment, photocopiers, and books in the production of curriculum materials.

Task 13. To assess the effectiveness of relevant publications and reports connected with BEC, their distribution, acceptance, and use by intended audiences.

Teacher Training Tasks

Provide commodity and material support and training in its use for the Department of Teacher Training and Development

Headquarters

4 Work Stations (LC 475, Colour Monitor interface and Printer) 15118.08

8 Work Stations (LC 475, Colour Monitor and interface) 11398.36

Network System

Photocopier 7614.14

Inservice Centers

12 Work Stations (LC 475, Colour Monitor Scanner, modem, interface and Printer) 87037.04

4 High Speed Heavy Duty Photocopiers 40000.00

Preservice Teacher Training Institutions

12 Work Stations (LC 475, Colour Monitor modem, compuserve, interface and Printer) 59640.74

4 VCR/TV video combination 11851.85

Participate on selected panels and committees

The participation of the Preservice and Inservice advisors are a variety of Ministry and Department Committees is described below.

Preservice Advisor

National Council on Teacher Education
Curriculum Coordinating Committee, NCTE
Board of Affiliated Institutions
Board of Affiliated Colleges of Education
3 Year JC Task Force for Colleges of Education
Diploma in Primary Education Task Force
Computer Advisory Committee
National Conference on Teacher Education Planning Committee
Basic Education Implementation Committee
Physical Education National Panel
Principals' Committee
MCOE Self-Study Team
Tonota COE Self-Study Team

Inservice Advisor

National Conference on Teacher Education Planning Committee
Basic Education Implementation Committee
Inservice Providers Seminar Planning Committee
Head Teacher Training Committee
Untrained Teacher Upgrade Committee
Breakthrough to Setswana Training
Project Method Training
Education Center Directors
UB-INSET Advisory Board
National Project Implementation Committee
Country Working Group for Commonwealth Secretariat
School Heads Training Program
ODA Secondary School Management Project
Education Center Directors Report Writing Committee

Publication, distribution and use of BEC publications and reports

Items Published by Preservice and Inservice Advisors

1. Management Manual
2. Diploma in Primary Education
3. Education Center Brochure
4. 2nd National Conference on Teacher Education: Abstracts
5. Inservice Providers Conference Report

6. Inservice in Action: 1994 - 95 Calendar
7. Education Center Report Writing
8. Technical Proposal on Distance Education
9. Guidelines for Classroom Observations
10. Curriculum Review Guidelines
11. TT & D Annual Reports

Each of the items listed above have been discussed in the narrative related to one or the other of the two advisors. In relation to the first four listed, the evaluation team has the same problem related to the documentation of acceptance and use that it had earlier with the assessment of long-term training -- the final drafts of each of these four have just been finished and are either being distributed or are about to be distributed.

The other materials listed had circulation and distribution appropriate to the material. Two items, the report writing and classroom observation materials, have been functional parts of the Education Center Directors' reporting process and the Breakthrough teacher advisors way of work in the schools. The calendar had widespread use as workshops and seminars were scheduled and revised throughout the time period. The technical proposal, which wasn't funded, served as a discussion piece for both BEC team activities and the Inservice Unit during the short-term training program associated with this topic.

Publications Still in Process

1. Database Blueprint
2. Database management manual
3. NCTE conference proceedings
4. NCTE Book of selected articles

Summaries, Assessments And Recommendations

In this section the scope of work requests the evaluation team to assess the proficiency of Education Officers in the use of project-provided commodities such as computer and video equipment, photo-copiers, and books in the production of curriculum materials, the functioning of standing committees to guide the implementation of the BEC project, and the effectiveness of relevant publications and reports connected with BEC, their distribution, acceptance, and use by intended audiences.

The data provided above show that commodities were purchased and distributed, the standing committees did meet and function, and the materials were produced and published. Data further documents that education officers and other personnel were trained in the use of the equipment provided -- training sessions were still being conducted during the time the evaluation team was on site.

The Department of Teacher Training and Development at the headquarters office profited immensely from the acquisition and use, after training, of the computer work stations provided through BEC. This equipment has created a way of work that will continue long after the life of the project. While some presentation equipment has already been provided to training institutions and centers, the bulk of the computer equipment slated for teacher training institutions and Education Centers was only just arriving as the evaluation team was doing its work. Again as in earlier situations, we cannot assess what has not occurred.

As to the publications, in regard to some, their acceptance and use cannot, as yet, be assessed. In regard to others, comments, all of which are positive, can be found earlier concerning the materials' perceived and projected value.

Project-Supported Institutional Change And Sustainability

Task 1. To assess the effectiveness of policy and institutional development procedures instituted within the CD & E and the TT & D Departments.

Task 9. To assess the extent of the MOE's implementation of project consultant recommendations.

Task 15. To assess the sustainability of BEC outputs in the light of the early closeout of the project.

Teacher Training Tasks

Advise on policies related to preservice teacher training

The Preservice advisor worked closely with the Chief Education Officer, Department of Teacher Training and Development, on a number of policy issues. These included:

a) *the National Council for Teacher Education*

This Council is the established policy advisory body for teacher education in Botswana. One example of policy change was the establishment of the Curriculum Co-ordinating Committee. (BEC Advisor was a major contributor in writing its terms of reference)

b) *Board of Affiliated Institutions of the University of Botswana*

The BEC Advisor has been invited to meetings of the above Board that governs the academic program of the Colleges. Many policy changes took place during BEC some examples include modification of the academic regulations, curriculum standardization and modification of Teaching Practice regulations.

c) *TT&D Task Forces*

The BEC Advisor is a member of the task forces of the TT&D for the Three-Year Junior Certificate Teacher Training and Phasing-in the Three-Year Diploma in Primary Education. His role in the two task forces include policy interpretation, modification and implementation.

d) *TT&D management*

The main role of TT&D is to implement government policies on teacher training. The advisor has been intimately involved in all policy matters. A major example is the modification of the self-study process.

Develop a consolidated training policy which clearly specifies structure, roles, responsibilities and standards

Very early on, inservice representatives worked as members of a Ministry reference group on the development of a consolidated training policy for the Ministry of Education. Those efforts were redirected and realigned following the guidance provided by the Government White Paper #2 in April, 1994. A consultant from the United Kingdom (Sussex) assisted the Ministry in the development of the policy statement. The inservice advisor participated in planning for and working with the consultant. A draft inservice training policy document has been produced by the Ministry reference group. That document is now in the hands of the Permanent Secretary for final approval and, when instituted, will guide the ways training activities operate for teachers and education officers.

BEC Consultancy Reports/Work Reviewed

The work of the following consultants had direct impact on teacher training, either in- service or preservice, and was reviewed by the team member assigned to teacher training. In every case, except that of P.T.M. Marope, whose work was still in process during the evaluation team visit, the reports were read and the recommendations reviewed. Documents and activities related to the topic of the consultancy and produced or occurring subsequent to the report were also reviewed to determine sustaining results of the work.

Two consultancies were not included in the list below -- that of P.T.M. Marope, who reviewed the BEC project prior to the close-out amendment to the Assessment of Project Impact and that of F. Klauss, who assisted BEC staff team and interpersonal issues.

Dr. Fredi Munger, University of Massachusetts, Diploma in Primary Education
Drs. Judith Warren Little, University of California, Berkeley, and Linda Pursley, Cornell University, Inservice Education
Dr. P.T.M. Marope, University of Botswana, Primary School Teacher Effectiveness Study
Apple Center, Gaborone, Database Design
Dr. George Urch, University of Massachusetts, DPE Evaluation
Dr. Madyun, Education Center Libraries

The two Consultancies related to the Diploma in Primary Education

Drs. Munger and Urch worked with TT & D and TTC/CoE personnel to conduct a formative evaluation of the Diploma in Primary Education program (Urch) and to explore ways to make the diploma available to holders of the primary certificate (Munger). Their consultant reports were written; their work was well received and used. Dr. Urch's work and his recommendations were especially visible in the July 1995 Diploma in Primary Education draft that describes the program being pursued at Tlokweng CoE and which will be used when the diploma program is initiated at Lobatse.

Primary School Teacher Effectiveness Consultancy

This consultancy is still in process as the evaluation team is doing its work. Its plans and workings have been discussed early in this narrative.

The Inservice Teacher Education Consultants

Drs. Little and Pursley provided assisted to the BEC project and the Inservice Unit serving as part of the team that planned and conducted the Inservice Providers Conference in January 1995. In this role, the consultants worked with the team prior to the conference, presented several sessions

throughout the week-long meeting, evaluated the conference, and, in their report, made recommendations to the Inservice Unit based upon their observations and experiences. Their work was positively evaluated by conference participants. The recommendations they made (relating to increased instructional resources at the centers and increased collaboration across MOE departments) were acknowledged and pursued.

The Library Consultant

Dr. Madyun spent one week in evaluation and training activities at the library and instructional resource units at each of the 11 currently operating Education Centers. His primary role was to provide training which included:

1. basic library maintenance skills,
2. collection enhancement, and
3. skills and abilities to meet site-specific problems.

As a secondary responsibility, Dr. Madyun was also asked to evaluate each setting and work with the Center personnel to improve their collection and services. His recommendations related to that evaluation and, due to the recency of the work, have not yet been acted upon.

The Apple Center Consultancy

The Apple Center, a commercial establishment in Gaborone, worked with the Preservice Advisor and TT & D staff to assist in the development of an automated network tying together the three TTCs, the three CoEs and the TT & D headquarters. The report developed was, in fact, a preliminary user's specification and manual for the network. It is now being used to continue the networking development efforts. Apple Center continues to be involved in the process; conducting training the day this is being written for lecturers and staff from each of the teacher training institutions.

Summaries and Assessments

The scope of work requested the evaluation team to assess the effectiveness of policy and institutional development procedures instituted within the CD & E and the TT & D Departments, the extent of the MOE's implementation of project consultant recommendations, and the sustainability of BEC outputs in the light of the early closeout of the project.

Earlier in this document, we have already commented upon the problem relating to the "bunching up" of the consultancies in the last nine months of the contract. In fact, all of those related to teacher training -- Little, Pursley, Urch, Munger, Madyun, Dunlap, Marope, the Apple Center, and Peterson -- occurred in 1995. While most of them provided assistance to different areas of teacher training -- Diploma, Library, Computers, Inservice, Meeting facilitation (Peterson),

Network Design, and Teacher Effectiveness, it is the same staff at the leadership level that was involved in planning, assisting, and following-up on the consultancy. This was true for Ministry leadership as well as for the BEC advisors. Some of this was a direct result of truncation; what other causes may have been present could not be readily determined.

Nonetheless, recommendations suggested by Urch, Munger, and Madyun were already visible in documents and activities. The nature of the Little, Pursley, and Peterson consultancies being more of service orientation resulted in much of their value being directly delivered to conference planners and participants who worked directly with the consultants.

In teacher training, the policies and institutional development activities which were put in place during the life of the BEC project were many. Some of these were effected with little assistance from BEC advisors; others, however, had direct and significant involvement of those advisors. These would include the move to Diploma in Primary Education, the development of an inservice training policy, the move to bring together the inservice regions and the Education Centers, the development of a management, monitoring and evaluation network among the teacher training institutions, the standardization of a process for curricular revisions in teacher training program, and revision of teacher training curricula to conform to RNPE and other recent innovations.

Summary

Preservice Teacher Training

Achievements and Strengths

Preservice teacher training in 1995 has the following products, processes, and capabilities which it did not have in 1992. While in each case, the BEC project had a role in its realization, it is true, in every case, that the primary impetus and work was provided by the Botswana teacher educators themselves.

1. A self-study process usable at both primary and junior secondary teacher training institutions.
2. A Management Manual for the Teacher Training Colleges.
3. A teacher training curriculum closely tied to revisions and innovations found in the school program.
4. A Diploma in Primary Education program already operating at one institution and plans for its implementation at all others.
5. An extremely computer literate headquarters and CoE staff.
6. The beginnings (equipment, prototypes, manuals, and initial training) of an Evaluation and Management network among the teacher training institutions and the Department of Teacher Training and Development.
7. A way of work that enables representatives of the various departments within the Ministry, the teacher training institutions, the Inservice unit, and the schools to cooperate, collaborate, and communicate to improve education in Botswana.

Areas Still Needing Attention

- I. The management, monitoring and evaluation system for the entire Teacher Training and Development System -- Preservice and Inservice.
2. Installation and personnel training for the increased computer capabilities at each TTC and CoE
3. The modeling of continuous assessment and criterion-reference testing in the courses and program of the college lecturers.
4. Localization of lecturers at the teacher training institutions.
5. Integration of primary and junior secondary teacher training.

BEC Preservice Goals, Tasks, and Outcomes

Conduct preservice needs assessment	Completed
Assist in the conduct of self studies for the COEs	Completed
Study Teacher Demand and Supply	Completed
Increase coordination, consultation, and communication among and between MOE units, e.g. TTCs, Centers, COEs, etc.	On-going
Produce and distribute the Management Manual to the TTCs	Being Distributed
Conduct the Primary Teacher Effectiveness Study	In process
Revise the 3 year Junior Certificate curriculum for Colleges of Education and assure that all primary and secondary school teachers from the TTCs & COEs are trained in the basic revised curriculum	In Process
Conduct computer awareness training workshops for lecturers	Completed
Develop a basic skills computer curriculum for the two colleges of education	In Process
Establish an "Evaluation and Management System" in TT & D -- Both Preservice and Inservice	In Process
Assist in CRT and CA training courses for TTC lecturers	Scheduled 1/96
Revise teacher training curricula to include CRT and CA materials	Completed
Conduct formative evaluations of the Primary Pilot Diploma program and recommend the necessary changes for adoption of a 3 year diploma program in the TTCs.	Completed

Inservice Teacher Training

Achievements and Strengths

The Inservice Unit of the Department of Teacher Training and Development has grown, developed, and consolidated over the past three years. It has responded to various demands from other Ministry departments as well as from its own Center and regional officers and provided inservice in curricular, instructional, measurement, guidance and counseling, AIDS, and other areas.

1. The number, nature and extent of current inservice offerings.
2. The success the unit has achieved in moving toward combined Inservice regions and Education Centers under one roof.
3. The level of consultation, collaboration, and communication with other Ministry departments that have needs or demands related to Inservice training.
4. The efforts to upgrade the Inservice providers, both the education officers in the Centers and regions and the individuals who provide training for given inservice purposes.
5. The development of an overall training policy for the country.
6. Plans to move toward school-based staff development as one part of an overall country plan.
7. The increased percentage of Botswana educators serving as Secondary inservice officers.

Areas Still Needing Attention

1. Incentives for involvement in inservice training are needed.
2. Inservice programs using a multiplier/cascade model must provide training in training as well as the training in the content of the inservice.
3. As is true with the preservice unit, the Inservice Unit is understaffed for all the inservice needs that it is attempting to fill.
4. The efforts toward school-based staff development need to be vigorously pursued.
5. Inservice is needed within TT & D's own agencies and personnel - that is, TT & D, TTCs and CoEs personnel need a staff development program and plan.
6. Planning for CRT/CA training, already started to some degree, must be intensified.

Recommendations

1. Obtain reports from Dr. D. K. LeCzel or have Inservice unit staff analyze her field notes and write up conclusions.
2. Develop inservice components that are responsive to teachers' problems and needs.
3. Develop a parallel data based management, monitoring and evaluation system to that being developed and networked by the Preservice Unit.

4. Increase staff at the Department of Teacher Training and Development with assignments in support of Inservice Teacher Training.
5. Involve the University in attempts to provide distance learning and credit-bearing incentives for inservice teacher training.
6. Extend the training and personnel development efforts within the Ministry of Education.
7. Monitor the quality of the training provided by resource teachers.

BEC Inservice Goals, Tasks, And Outcomes

Conduct Inservice needs assessment	Completed
Assist in the delivery of inservice activities across the nine (now 10) years of Basic Education including:	
1.review the structure of inservice delivery systems,	Review Completed no report written
2.assist in the coordination of inservice training,	Assisted process
3.provide training in CRT/continuous assessment,	Assisted process
4.assist with the Commonwealth Secretariat Training, and	Completed
5.develop an annual inservice calendar planning process.	Completed
Strengthen Training Capabilities of Inservice officers by:	
1.training inservice officers and	Partly Completed
2.assisting Breakthrough teacher advisors	Completed
Strengthen Infrastructural base for Inservice activities by:	
1.developing an inservice manual,	Partly Completed
2.enhancing resources at Education Centre Libraries	Completed
3.establishing a monitoring and evaluation system, and	In process
4.increasing collaboration among and between MOE units.	In process
Establish information base for all inservice activities through:	
1.conducting effectiveness studies and	Completed
2.developing a data base among inservice providers	In process
Develop and implement a policy for incentives for Inservice program and activities	In process

Final Comments

Just what, of all that we've examined and assessed in the area of teacher training is likely to be sustained beyond the life of the project and inspite of its truncation? None of the team members is a prophet but, nonetheless, we believe that the following aspects of teacher training and development will be sustained:

1. the implementation of the Diploma in Primary Education,
2. the implementation of an inservice training policy,
3. the uniting of the inservice regions and the Education Centers,
4. the utilization of a management, monitoring and evaluation network among the teacher training institutions and the inservice units,
5. the standardization of a process for curricular revisions in teacher training program,
6. revision of teacher training curricula to conform to RNPE and other recent innovations, and
7. the use of the Self-Study process for institutional improvement.

While much of this represents the activities of a well-organized Ministry of Education fulfilling national plans and goals, it also represents activities in which the BEC project had a supporting, assisting role as the nation's educational system moves towards its goal of a ten-year Basic Education program.

The BEC advisors worked within their units and departments to support and promote consolidation among those agencies. Consolidation, for the most part, was advanced considerably during the life of the project. It seemed to the writer, however, that, at times it was, in reality, five, later six, individuals doing good work, individually prescribed, rather than, as an alternative, a project team working, sharing, and planning together for common purposes. One would have hope that a project devoted to consolidation would have been managed in such a way as to function as a cohesive, consolidated unit itself.

Finally, the plans and activities currently underway as preparation for the NDP VIII must continue the consolidation moves visible at present. The next planning cycle must address the overall implementation of the Basic Education curriculum and the roles each department and unit will play in that implementation -- as one overall "picture" not as separate plans by separate agencies.

CHAPTER 4. STUDENT ASSESSMENT

The evaluation's scope of work for student assessment lists two goals with an evaluation task for each. These are to assess the extent to which CRT and continuous assessment systems have been implemented, and to assess strategies designed to introduce system change and reporting procedures appropriate for the CRT framework.

Project Goal. Establish and monitor student performance using criterion referenced testing (CRT) and school-based continuous assessment.

Evaluation Task. To assess the effectiveness of implementing test blueprinting for PSLE subjects, of developing performance standards to assign marks for PSLE achievement, and of a system for analyzing the results of CRT-developed tests.

Project Goal. Establish an assessment system that provides feedback on student learning achievement to pupils, teachers, parents, policy makers, and the public service.

Evaluation Task. To assess the implementation process (and progress) in replacing the norm-referenced (NRT) basis for the construction of Primary School Leaving Examinations and Junior Certificate Examinations with a Criterion-Referenced (CRT) basis for measurement.

BEC assistance is to support MOE's implementation of a CRT technology in Botswana for assessing student learning through certification testing and continuous assessment, and to support the implementation of the CRT technology through training at all levels of the education system.

Criterion-Referenced Testing and Continuous Assessment

Criterion-referenced testing (CRT) and norm-referenced testing (NRT) each signify a technology (an application of knowledge for a practical end) for building assessment methods. Norm-referencing interprets test scores in terms of well-defined populations of respondents (such as all Standard 7 students). Criterion-referencing interprets test scores in terms of well-defined populations of learning targets (such as curriculum objectives).

CRT is a process to develop assessment methods so that obtained measures can be interpreted in terms of the attainment of specified learning targets (objectives, performance tasks, competencies).

Continuous assessment refers to frequent and periodic use by teachers of various assessment methods, ranging from classroom questioning and snap quizzes to portfolios

and formal tests, in order to measure and evaluate student progress on objectives-related performances.

CRT exists to a greater or lesser degree in virtually all assessment. It is very weak in present PSLE testing-- one can not evaluate test scores in terms of the attainment of specific learning objectives, even though test items are based on curriculum objectives. On the other hand, some of Botswana's best teachers undoubtedly apply continuous assessment methods that can be characterized by strong CRT -- they create classroom tests whose items tightly correspond to specific curriculum objectives which guide their teaching, and they are able to evaluate their students' performance in relation to these objectives.

Examinations, Research and Testing Division (ERTD)

The Examinations, Research and Testing Division (ERTD) is responsible for administering, preparing, scoring, marking, analyzing, and reporting the results of annual national certification tests -- the Primary School Leaving Certificate Examinations (PSLE) and the Junior Certificate Examinations (JCE). ERTD is a newly-formed division, comprised of staff formerly in the Examinations Unit and RTC. ERTD reports directly to the Permanent Secretary of the Ministry of Education. The recommendation in the Revised National Policy on Education is that ERTD should eventually become a Botswana Examinations Council. Table OO lists currently filled and vacant professional posts in ERTD. There are 15 filled posts (three persons are now on study leave at the University of Pittsburgh and one post is occupied by Dr Quansah) and 10 vacant posts. Mrs Moahi is Acting Head of ERTD.

Table IV
Currently Filled and Vacant ERTD Professional Positions

Filled Positions		Officer	Vacant Posts
D2	Principal Education Officer 1	-----	(1)
D3	Principal Research Testing Officer	Mrs S. Moahi	
D3	Registrar of Examinations	Mrs L. Charakupa	
D4	Senior Research Testing Officer	Mr W. Davids	(6)
D4	Senior Research Testing Officer	Mrs J. Gaobakwe	
D4	Measurement Specialist	Dr K. Quansah (BEC)	
C1	Deputy Registrar	Mr B. Masuga	(2)
C1	Principal Examination Officer	Mr A. Utlwang (study)	(1)
C2	Assistant Registrar	Ms R. Sebetlela	
C2	Assistant Registrar	Mr K. Gwakuba	
C2	Research Testing Officer	Ms K. Letshabo (study)	
C2	Research Testing Officer	Mrs T. Mmualefe	
C2	Research Testing Officer	Mrs M. Keitheile	
C3	Assistant Registrar	Mr J. Tsimako	
C3	Assistant Research Testing Officer	Mr O. Siele (study)	
C3	Assistant Research Testing Officer	Ms C. Gasemotho	

Development of a CRT-Based Teacher Training Program

Development and implementation of a CRT plan for training primary school teachers started with the formation in 1992, before BEC arrived, of the Criterion Referenced Testing Implementation Committee (CRTIC) whose membership consists of nineteen MOE officers from ERTD, EPD, CDD, TT&D, and the Primary Department. CRTIC members are listed in Table UU.

Table V
CRTIC Members

CRTIC Member	Office	CRTIC Member	Office
L Charakupa	ERTD	N Koolese	CDD
W Davids	ERTD	M Masisi	CDD
J Gaobakwe	ERTD	S Makgothi	CDD
K Gwakuba	ERTD	S Mothei	CDD
M Keitheile	ERTD	N Ratsoma	CDD
S Moahi	ERTD	T Mogotsi	TT&D
K Quansah	ERTD	B Rauwe	TT&D
O Siele	ERTD	O Sefhako	TT&D
J Tsimako	ERTD	B Ntshwaneng	EPD
E Kgwekgwenyane	Primary		

lose coordination is essential between ERTD staff and CDD staff whose officers have the deepest knowledge of the curriculum and its objectives, and TT&D staff who will bear the heaviest load in training teachers to teach the new curriculum and to assess its learning effects.

The shift from NRT-based to CRT-based PSLE and JCE certification testing had been decided upon by MOE before BEC's start-up partly due to earlier JSEIP-supported activities in this direction. Mrs Serara Moahi, now the acting head of ERTD, was closely involved in this effort as were other staff in CDD and the then Research and Testing Centre (RTC). Dr Anthony Nitko conducted two short-term consultancies under the JSEIP project and wrote two reports: *Implementing Criterion-Referenced Examinations in Botswana* (August 1990), and *Sustaining Criterion-Referenced Examinations in Botswana* (July 1991).

CRTIC's 41 School Pilot Project. CRTIC developed a CRT training and implementation pilot project involving 41 primary schools. The 41 schools represented high, middle, and low mean achievement levels based upon 1991 school-level PSLE results. CRTIC created end-of-term

CRT Standard 5 tests and trained Standard 5 teachers in CRT continuous assessment testing, monitored teacher and student classroom activities, and collected end-of-term test scores and information about use of the CRT approach in teaching and assessment from teachers by means of *End-of-Term School Reports*. Content of the CRTIC program included the principles of CRT; relationships between instruction, learning, and assessment; use of the data collection form; the development of classroom CRT tests; marking and grading CRT tests; and interpreting results.

CRTIC conducted a workshop for teachers in the pilot schools at the beginning of each term, in which objectives were selected to be schemed by teachers for the term. Teachers were trained to write and to grade their own classroom assessment tests with questions linked to these objectives. CRTIC staff constructed 25-item end-of-term tests for these same objectives, which were sent to schools to be administered and marked by teachers. Workshops held at the end of the term then enabled CRTIC members to work individually with teachers to review their pupils' achievement on class tests and on tests set by CRTIC, both based on the same objectives, and to review with teachers the lesson plans and schemes developed to teach these objectives.

Initial pilot training for 125 Standard 5 teachers began in April 1993 in the subjects of Setswana, mathematics, and social studies. Their training was completed six terms later at the end of 1994. Thus this first group participated in six training workshops (one per term). A second cohort of 125 teachers started training in 1994 which is scheduled for completion in 1995. Science and English were added as subjects for this group. School reports were submitted by each pilot school during 1993 and 1994.

This CRTIC pilot project was never meant to be a CRT impact study. The main purposes of data collection in the 41 pilot schools were formative -- to obtain feedback on the progress of CRT implementation, to identify problems in implementing CRT procedures, and to provide help to teachers. Formative input was obtained through school visits by CRTIC members and in workshops, where school-by-school monitoring and advisement was carried out by CRTIC members.

Data other than test scores collected through the reports and school visits included schemes of work, blueprints, lesson plans, listed assessment problems, and strong and weak points of the implementation activities. Topics addressed by CRTIC were: (1) schemes of work and their coverage of syllabus objectives, (2) lesson plans with attention to the match of subject content and objectives, (3) test plans and whether these adequately covered important objectives of the lesson, (4) test scores, (5) students' class notes and exercise books, and (6) general evaluation and comments. Main problems included teacher's experienced difficulty in interpreting syllabus objectives, their inadequacies in teaching particular subject's objectives, the development of CRT-based continuous assessment items to assess different levels of learning, and lack of teacher guides.

CRTIC never focused on student achievement gain at this early stage of CRT training. The central concern was teachers' ability to link together curriculum objectives, teaching, and classroom learning assessment. Plans, however, call for a study of the impact of CRT training and implementation over the three years from 1993 through 1995. The 1995 PSLE test results for candidates in the 41 pilot schools will be compared with results for candidates in matched control schools to determine whether a three-year exposure to CRTIC training influenced PSLE achievement.

School data is not being collected in 1995 because (1) sufficient formative information concerning training outcomes in the 41 pilot schools was obtained to revise training and training materials to an acceptable level, (2) ERTD and CRTIC had gained the experience to develop a nationwide CRT training program for all primary teachers, and (3) the initial phase of this national training program had to be implemented prior to the 1997 administration of an official CRT-based PSLE.

The National Training Program. The document *Changing Classroom Assessment and the National Examination System to Criterion-Referenced Testing* prepared by ERTD starts out with the following introductory statement:

To be able to carry out the mandate of changing the assessment system from norm-referenced test (NRT) to criterion-referenced testing (CRT) requires changing

- *classroom testing from norm-referenced testing. This implies the training of teachers in the development and use of criterion-referenced tests for classroom assessment.*
- *the assessment system at the national level for the PSLE and the JCE from norm-referenced testing to criterion-referenced testing.*

Training Standard 5 Teachers. Dr Quansah helped CRTIC strengthen CRT test development produce the 89 page *Teachers Handbook on Criterion-Referenced Testing and Continuous Assessment*. The fourth draft, completed in September 1994, contains three modules, each of which was originally planned for a five-day workshop. In practice, however. all of the units are covered in one week in the National Training Program.

Table VI

Topics Covered in the CRTIC-Developed "Teachers Handbook on
CRT and Continuous Assessment:

Module	Unit
Module One	<ul style="list-style-type: none"> ◦ The Nature of Criterion-Referenced Testing ◦ Using Instructional Objectives for Teaching and Assessment ◦ Instruction and Learning Behaviours
Module Two	<ul style="list-style-type: none"> ◦ Writing Good Objective Test Items ◦ Writing Items and Questions for Subjective Test Formats ◦ Developing Criterion-Referenced Tests for Assessing Pupils' Learning

- Module Three
- Developing Continuous Assessment Procedures
 - Marking, Grading and Interpreting Criterion-Referenced Test Results
 - Analyzing and Using Assessment Results in the Classroom
-

ERTD estimates that approximately 13600 primary and junior secondary teachers need to be trained(see Table CC). Regional training was intended to reach all Standard 5 teachers and headteachers (approximately 2000). The second phase is to train the remaining primary school teachers and headteachers by the end of 1997 when the first official CRT-based PSLE will be administered.

Table VII

Number of Schools, Classrooms, Students, and Teachers
at the Primary and Junior Secondary Levels: 1993

Level	Schools	Teachers	Students	
Primary	657	6397	9772	396487
Junior Secondary	173	2320	3835	54781
Total	830	8717	13607	451268

The information reported here is taken from an ERTD paper titled *Changing Classroom Assessment and the National Examination System to Criterion-Referenced Testing* (July 1995). Training for Standard 5 teachers started with a CRT consultative seminar for Principal Education Officers (PEOs) held in Gaborone under the auspices of CRTIC in September 1994. Agreement was reached that Regional Trainers would consist of Education Officers (EOs) that included Primary Senior Education Officers (SEOs), In-Service EOs, Teacher Advisers, and Primary Teacher Training Lecturers. Dates for 3-5 day training workshops were:

June 1994	PEOs' Consultative Workshop (as noted)
September 1994	Regional Trainers' Workshop (first)
October 1994	Regional Trainers' Workshop (second)

Eighty Regional Trainers were trained by CRTIC in two workshops held in Gaborone in September and October. Both Regional Trainers' workshops were attended by eight lecturers from Primary Teacher Training Colleges. Regional Trainers were organized into five regional teams with a coordinator nominated for each. The 80 Regional Trainers trained all Standard 5 primary headteachers and teachers (N=1973) between October 1994 and May 1995 as shown in Table DD.

Table VIII

Number of Standard 5 teachers and Headteachers Trained
by Regional Trainers by May 1955

Region	Std 5	Heads	Total
North East	130	59	189
Central South	298	119	417
Central North	291	71	362
South	295	155	450
South Central	553	2	555
Totals	1567	406	1973
41 Pilot Schools		250	---
250			
New Total	1817	406	2223

When the 250 trained teachers in the 41 pilot schools are added to the number of teachers trained regionally, the total number of trained Standard 5 teachers and headteachers equals 2223, twenty three per cent (23%) of Botswana's 9772 Standard 5 teachers and headteachers.

A Regional Training Coordinators' meeting was held in April 1995. Seven members of CRTIC and all five Regional Coordinators attended. Content and administrative problems discussed included difficulties in mapping syllabus objectives, in item preparation, and in item review. These discussions formed a basis for planning further training programs held in July for three regional teams in Francistown and for the remaining two regional teams in Gaborone.

Training All Primary Teachers. A national training program was designed that consisted of three levels of trainers. Level 1 are Training Programme Supervisors (16 CRTIC members drawn from ERTD, CDD, TT&D, and the Primary Department). Level 2 are Trainers (80 officers selected from TT&D and the Primary Department). Level 3 are Resource Persons who are primary teachers selected and trained by Level 2 trainers; each primary school will then have a Resource Person who will train other teachers in the school under monitoring and supervision of Level 2 trainers.

The CRT training plan was discussed at a TT&D conference in April 1994 and adopted. Approximately 700 Resource Persons will be trained by the 80 Level 2 Trainers starting in September 1995 and ending in March 1996. CRITIC members (Level 1 trainers) will monitor the program. Details of the national training plan, including the identification of the Resource Persons, were worked out in two July 1995 updating workshops. The training of all primary teachers is expected to be completed in mid-1997 when the first CRT-based PSLE is about to be administered.

Junior Secondary Training Plans. An orientation seminar on CRT was held in June 1994 for Secondary In-Service Officers. The seminar addressed the principles and use of CRT in the classroom and discussed junior secondary teacher training. The decision was taken to start CRT training of junior secondary school teachers in 1996 at the beginning of the three-year junior secondary program.

Development of a CRT-based Certification Testing Program

There are enough Junior Secondary School places for Standard 7 school leavers so that use of the PSLE for JSS selection can be discontinued. The time is appropriate now to switch to a criterion-referenced testing program. Steps in CRT-based test construction are depicted in the chart on the next page. CRT testing rests on four critical test construction activities -- (1) developing test blueprints that categorize curriculum objectives by content, cognitive level, or other dimensions meeting information needs and reporting requirements, (2) tight alignment of test items with clearly stated curriculum objectives to be tested, (3) developing a test plan that includes the sampling of objectives to be tested, and (4) developing item specifications that prescribe item content and format rules.

PSLE Test Blueprints. Draft blueprints have been prepared for all five PSLE-tested subjects in

workshops attended jointly by ERTD and CDD officers in December 1994 and March 1995. Final blueprints are nearing completion. In CRT testing, nothing is more critical than the test blueprint. It is not used simply to pigeon-hole testable curriculum objectives; test blueprint categories identify information that matters to users such as teachers, students, teacher trainers and curriculum developers. Items corresponding to test blueprints that are characterized by clear information categories carry information useful for curriculum evaluation or teaching improvement. Teacher trainers and curriculum development officers should participate with ERTD assessment specialists in the refinement of draft blueprints in order to ensure that their information needs are met. One problem in finalizing the draft blueprints is the demanding schedule of CDD staff who are developing the three-year junior secondary syllabuses. It is expected that final drafts of the blueprints will be ready by early 1996. Meanwhile, an ERTD meeting scheduled in September 1995 will review current draft blueprints to be used for further discussion with CDD.

PSLE Item Preparation. A May 1995 item writing workshop, attended by 80 primary teachers, was held in Gaborone. The first two days were spent reviewing draft test blueprints. Item writing was carried out in the final three days. Altogether 951 objective items were written of which perhaps 40 per cent are expected to be of refinable quality. The number of items written for each subject is shown in Table FF. These will be reviewed, edited, and culled or revised as necessary. Surviving items are destined for further editing, banking, and use in the 1997 PSLE. Thirty essay-type questions were also written for English Paper 2 and for Setswana Paper 2.

Table IX

PSLE Objective Items Written
in May 1995 Workshop

Subject	Items
English	213
Setswana	213
Mathematics	120
Science	122
Social Studies	283
Total	951

Item specification forms were not used at this workshop, but will be used later when specimen papers are sent to schools one year before the official 1997 PSLE is administered. Item specification forms contain rules for writing items that correspond to identified curriculum objectives. Two item writers using specification forms will generally produce items that are more alike than they would be if items were written directly from statements of objectives -- this facilitates the production of parallel tests from one year to the next. Specifications also enable different item types or formats for the same objective to be clearly distinguished.

Item Classification for Item Banking. Computerized item banking requires among other things that items be classified and coded according to test blueprint dimensions. ERTD's provisional item coding is for the following variables: (1) syllabus reference, (2) content dimension, (3) cognitive dimension, (4) key, (5) item type, (6) flags, (7) status (raw, pretested, final and so on), (8) data source, (9) type of stimulus (graphics, tables, and so on). Mrs Mmualefe, who is in charge of the item banking system, is supervising ERTD officers in classifying newly written items. Revising the provisional variables will of course be necessary when the PSLE

test blueprint dimensions are fixed.

Computerized Item Banking. Computerizing item banking is a specialized area, so a short-term consultant was contracted by BEC to assist ERTD in planning an item banking system. The consultant first visited ERTD in July 1995. Terms of reference were to develop criteria for evaluating item banking, item analysis, and test scoring software; to evaluate software features, to design a computer configuration to support item banking and item analysis, to develop data transfer mechanisms for moving data from NCS scanner format to an item analysis program, and to develop an item banking implementation plan.

Tentative terms of reference for a second consultancy were prepared, but ERTD is not pursuing this second visit by the consultant for two reasons: (1) staff want to examine an item banking program developed by Rovinelli, and (2) staff believe that item banking should be incorporated with other computerized functions such as mark reading, test scoring, data processing, and test reporting. ERTD's need (in view of the 1996 CRT-based trial PSLE), is to develop an overall computerization plan and to specify the programming requirements for the plan. Mrs Moahi has requested BEC assistance in securing the short-term consultancy of Dr Richard Johnson, a recognized expert in this area. The USAID Project Manager and the BEC Chief of Party speeded the paper work for Dr Johnson's consultancy and he will arrive in Botswana on 7 September 1995. This would be followed up in 1996 when a consultancy under MOE contract would write the specified programs, assist ERTD in processing the 1996 PSLE test data, and begin training ERTD staff for 1997 processing.

Setting Standards. The current PSLE achievement categories of "A, B, C, D" are, as most persons know, meaningless as quality marks. They signify test performance rank-ordered in the broadest terms. CRT will change this by referencing test performance to curriculum objectives. Standards will be set to determine quality marks. Procedures for setting cut scores for "A, B, C, D" marks will be established just before the CRT-based trial PSLE is administered in 1996. Although this is a technical issue for ERTD, standard setting needs CDD officers' understanding of the curriculum as well as teachers' expertise in teaching the curriculum.

Measuring CRT Impact. ERTD has planned a baseline study to examine whether Standard 7 pupil achievement improves following long-term exposure to the CRT approach. CRT tests will be developed in five PSLE subjects. Tests will be given to the experimental group (those in the 41 School Pilot Project who started CRT work in 1993) and to a control group (students in 3-4 schools sampled from each district). Questionnaires will be administered to students and teachers in the pilot and control schools. Experimental and control group differences will be analyzed for statistical significance. The planned test administration date in July 1995 was rescheduled. The 1995 PSLE will provide scores that can be merged with this data to compare PSLE score means for the two groups. This merging will enable estimation of the relationship between PSLE scores and CRT test scores at the school level, providing an estimate of the concurrent validity of the CRT tests. Reports to be written when the study is finished include a diagnostic analysis of pupil performance, school rosters, and one that presents research findings.

BEC-Supported Accomplishments

This section deals with BEC's support of the ERTD's assessment agenda. It first considers BEC's long-term Educational Measurement Specialist. The work of short-term consultants will then be discussed, followed by sections on ERTD staff study programs and study visits. Other project-related contributions such as computers, software, and books are finally considered.

Educational Measurement Advisor. Dr Kofi Quansah is BEC's Educational Measurement Advisor. His role defined in the AED contract is "to assist the MOE's Department of Curriculum Development and Evaluation (CD&E) in developing and implementing a comprehensive, integrated, and effective system of student assessment for the basic education system." Tasks listed in his contract scope of work are:

- Advise in the planning, design, conduct, and analysis of a needs assessment of the Student Assessment and Evaluation element of BEC;
- Advise in the planning, design, conduct, analysis, and implementation of annual action plans for the Student Assessment and Evaluation element of BEC;
- Provide systematic in-service training to RTC counterpart(s) through conferences, seminars, and workshops;
- Advise in designing and conducting in-country, short-term workshops or seminars in Student Assessment policies and procedures for other MOE, UB, and community groups;
- Advise in designing participant training programs abroad, and participating in pre-departure orientations, monitoring, and follow-on activities;
- Prepare required documents and reports as required by MOE, Contractor, and USAID (e.g., specifications for testing instruments and procedures, specifications for tests and other purchased commodities).

The BEC Advisor's planned support of ERTD's work is described in more detail by his individual workplan objectives developed in the needs assessment exercise and which relate to the needs and objectives listed on the previous page. His workplan objectives were furthermore written to conform with ERTD's tasks and timelines. This makes them shared ERTD/BEC objectives.

Dr Quansah's original workplan objectives fell into three categories related to student assessment and evaluation: (1) the implementation of a criterion-referenced test development technology for constructing national certification tests, (2) the development of continuous assessment procedures for teachers, and (3) the design and implementation of a training program in student assessment methods for teachers and relevant MOE practitioners. Following notice that BEC's close-out date was to be brought forward to September 1995, all BEC staff revised their original workplan objectives. Dr Quansah's revised close-out objectives, shown in the chart on the following pages, focussed on the first and third categories of objectives, dropping the second category dealing with continuous assessment. This decision was of course made

within the context of programmatic directions ERTD was scheduling.

Discussion in this section deals with Dr Quansah's revised workplan objectives. Under each of the two areas, each workplan objective (1.0, 2.0, 3.0, and so on) is first interpreted in the italicized text labelled "Evaluator Comments." These comments were reviewed by ERTD so that an accurate description could be written of activities carried out under each sub-objective, products resulting from these activities, and the completion status of each sub-objective.

Output 1. The establishment of a sustainable system to evaluate and improve student learning achievement and educational system performance (API Subtarget 1.B.1).

Initial Workplan Objectives

- 1.0 Test blueprints for all subjects and all grades developed
- 2.0 Criterion standards for judging students test performance established
- 3.0 Grade criteria for the award of A, B, C, D, clearly defined.
- 4.0 Validation mechanism established to link criterion-referenced tests to syllabus objectives.
- 5.0 Prototype criterion-referenced tests designed based on syllabus objectives for all grades.
- 6.0 Mechanism in place to analyze results of criterion-referenced tests and produce test data for reports, remedial instruction, etc.
- 7.0 Mechanism established for monitoring and evaluating CRT test processes in primary and junior secondary schools, and for assessing the attitudes of students and teachers toward the new form of testing.
- 8.0 Norm-referenced Primary School Leaving Examinations replaced with CRT tests.
- 9.0 Norm-referenced Junior Certificate Examinations replaced with CRT tests.
- 10.0 Reports on CRT assessments prepared and reported to relevant stakeholders.

Close-out Workplan Objectives

- 2.0 Test blueprints for PSLE subjects developed.
- 3.0 Performance standards for grade awards established.
- 4.0 Validation mechanism established to link referenced tests to syllabus objectives.
- 5.0 Mechanism in place to analyze results of criterion-referenced tests.
- 1.0 Norm-referenced PSLE replaced with CRT tests by 1996/1997.
- 6.0 Reports on CRT assessments prepared and reported to relevant stakeholders.

Output 2. The establishment of a sustainable system to use continuous assessment of student performance for all subjects at all grade levels (API Subtarget 1.B.2).

Initial Workplan Objectives

Close-out Workplan Objectives

- 1.0 Continuous assessment procedures for all subjects at all grade levels developed.
- 2.0 Continuous assessment problems/tasks developed for each subject.
- 3.0 Mechanism for monitoring and evaluating continuous assessment in schools established.
- 4.0 Mechanism established to analyze and report continuous assessment results.
- 5.0 Mechanism established for using data and recommendations from evaluation reports and examinations data for quality control and for reporting to schools and stakeholders.

Output 3. The establishment of a sustainable system to train new teachers, current teachers, and relevant MOE practitioners in student assessment procedures (API Subtarget 1.B.3).

Initial Workplan Objectives

Close-out Workplan Objectives

- | | |
|---|--|
| <ol style="list-style-type: none">1.0 Pre-service teacher training course in student assessment updated. (Drafts completed and given to TT&D)2.0 Pre-service teacher training course in continuous assessment updated. (Drafts completed and given to TT&D)3.0 In-service training program developed to ensure that teachers in the field and other practitioners acquire skills in criterion-acquire referenced testing and continuous assessment.4.0 Mechanism established for monitoring and evaluating the practice of CRT-based testing and continuous assessment.5.0 Feedback, quality control, and report systems to teachers established.6.0 Develop and conduct in-house courses in Educational Measurement and Statistics. | <ol style="list-style-type: none">1.0 In-service training program developed to ensure that teachers in the field and other practitioners acquire skills in CRT and continuous assessment |
|---|--|

Area: Development of a CRT-based Certification Testing Program

Objective 1.0: Norm-referenced PSLE replaced with criterion-referenced tests by 1996-97

Evaluator's Comments. The CRT-based approach introduces a test development technology requiring ERTD to develop new and different test development tasks and products than those they were familiar with in the past. The past purpose of the PSLE was to select higher-achieving candidates for admission to junior secondary school. Although curriculum objectives did to a great extent influence item writing for these past tests (simply because they were subject tests), there was weak alignment of curriculum objectives with PSLE test items. New CRT-based assessment tasks are to create stakeholder-relevant test blueprints, explicit test plans, item writing specifications, items written from specifications, revised computer scoring and reporting programs, and reports that make sense to various stakeholders. Activities are tied together by information needs. The 1996 trial PSLE will consist of CRT-based tests in Setswana, English, mathematics, science and and social studies. The 1997 PSLE will be the first official CRT-based PSLE. BEC-support provided by Dr Quansah is briefly summarized below for sub-objectives that reflect interim steps in reaching objective 1.0.

1.1 Develop CRT PSLE and JCE activity schedule

ERTD prepared plans for test blueprinting, writing items, reviewing, and classifying items, item tryout testing, development of a test plan, item editing, test assembly, establishing grade criteria, and standard setting. All of these required in-house training and practice. Training is organized in terms of in-house seminars at times and dates set by ERTD. Training results in draft products such as test blueprints and test items. CDD and ERTD together produced draft test blueprints which will be reviewed and finalized by early 1996. Other products such as item writing specifications and items can only be revised and completed for the 1996 trial PSLE after final test blueprints have been completed by CDD and ERTD.

Product: Training papers (see ERTD/BEC Reports and Papers in following section)

Status: Partly completed by BEC close-out. Draft blueprints and items ready. Test plan is completed. Draft grade criteria and standard setting done in August 1995, finished in early 1996.

1.2 Review manual of examinations administrative procedures

Dr Quansah has been and is currently working with Mrs Charakupa, the Examinations Registrar in ERTD, on reviewing a test administration manual. The manual is for ERTD staff and contains guidelines for the test administration. It will be in final form by project close-out.

Product: Test Administration Manual

Status: Completed by BEC close-out.

1.3 Plan examining personnel records system

A database for JCE markers has already been started by the Registrar, Mrs Charakupa. When completed, the database will not only be useful as a record of ERTD markers, but will also be useful for documenting markers' production and payments. The system will later be extended to PSLE markers.

Product: A dBase file developed by Mr Mtekateka under ERTD direction.
Status: Completed in August 1995.

1.4 Develop marker evaluation system

ERTD tests contain papers other than those with multiple-choice items. These consist of open-ended short answer items and essay tasks. Markers are assembled to evaluate and mark students' papers, and record-keeping system is needed. The marker and marking output information entered into the database mentioned in Objective 1.3 is useful in estimating intermarker reliability and intramarker consistency. These statistical indices are used to evaluate the quality of individual marker's work. The information is used for assessing which markers would be invited for the following year's examinations marking sessions based upon their marking consistency. Completion date for this marker evaluation system is September 1995.

Product: Procedural guide to determine marker reliability and marker consistency.
Status: Completed by BEC close-out.

Objective 2.0: Test blueprints for PSLE subjects developed.

Evaluator's Comments. In implementing a CRT-based test development system, nothing is more important than the test blueprint. It is a map of curriculum objectives to-be-tested. These objectives (or learning targets like performance tasks and competencies) are cross-classified according to dimensions, descriptive of well-stated objectives, that are related to the content organization of the curriculum and to cognitive learning levels. These two dimensions signify information useful to stakeholders such as students, curriculum developers, and teachers. Information contained in the test blueprint is carried through each step in CRT-based test construction all the way to the reports of test performance contained in PSLE certificates, school rosters, CDD reports, TT&D reports, and item bank computer files. ERTD completed its work on PSLE blueprints in August 1995 and will turn these over to CDD for final review and approval so that next steps in developing the 1996 PSLE can proceed.

2.1 Select and develop uniform titles for learning behaviors to be used for diagnostic CRTs

Draft PSLE blueprints were prepared for all five PSLE subject tests in workshops attended jointly by ERTD and CDD officers in December 1994 and March 1995. Uniform blueprint dimension titles (the identified names of the curriculum content and thinking process categories) were provisionally developed then. ERTD development of final draft blueprints, including the identification of dimension category names, will be completed by the end of September 1995 and then reviewed with CDD early in 1996.

Product: Taxonomy of test blueprint dimensions.

Status: Completed by BEC close-out.

2.2 Develop test blueprints and test plans for PSLE subjects

The development of test plans describing characteristics of the 1996 PSLE and its administration and scoring was partly finished by ERTD and CDD in March 1995. All five subjects will have a 60-item multiple choice test; and Setswana and English will administer an essay examination. Essays are written in August; multiple-choice tests are given in October. About 40,000 examinees will sit the PSLE. Scoring and reporting programs need to be prepared, and Mrs Moahi has taken steps to ensure that computer specifications are prepared as soon as possible. Final test plans must await final test blueprint approvals.

Product: PSLE test blueprints in Setswana, English, mathematics, social studies, science.

Product: PSLE test plans in Setswana, English, mathematics, social studies, science.

Status: Final PSLE blueprints completed and test plans finished by February/March 1996.

Objective 3.0: Performance standards for grade awards established

Evaluator's Comments. This objective relates to the way that CRT-based test performance is graded. Standard score reporting of PSLE test achievement will be obsolete; grading related to the attainment of identified curriculum objectives will be established. Definitions of quality levels descriptive of student performance are needed. This is done by identifying the characteristics of students who perform at the various grade levels, and by determining cut scores on a test that distinguish between these types of students. This is called "standard setting." Obviously a change in the reporting system implies change in computer processing and reporting operations.

3.1 Using established procedures for standard setting, establish the performance standards for grades A, B, C, D, for the PSLE

An established Ebel or Angoff procedure will be used for standard setting to determine cutscores between marks of A and B, B and C, and C and D. These establish score-to-mark conversions for certificates and school rosters of student achievement. ERTD staff have participated in these exercises even back in JSEIP times. Standard setting for the 1996 trial PSLE obviously needs to be done before 1996 PSLE test papers are scanned and computer processed, since a scoring program must be in place then. ERTD may elect to wait for final standard setting and determination of 1996 cutscores until camera-ready copy of the PSLE is ready. In anticipation of this, in-house training on standard setting procedures will start on 30 August 1995 with Dr Quansah's assistance. A section in the *Teachers Handbook on Criterion-Referenced Testing and Continuous Assessment* treats this topic.

Product: Materials from other examining boards will be used for training.

Product: Need grade-to-mark conversions and computer scoring programs.

Status: Final decisions on grade criteria and grade cutoff scores will be made jointly ERDT, CDD, and TT&D by mid 1996 after test blueprints, test plans, item specifications have been completed.

Objective 4.0: Validation mechanism established to link CRT tests to syllabus objectives

Evaluator's Comments. An intended CRT-based test development system only works when test items are placed in correspondence with a test blueprint map of objectives to be tested. Much work entails the judgments of CDD staff, ERTD staff, and experienced teachers who are asked to validate the connections between items and objectives, and between items and the way objectives are taught in schools. This evaluation is carried out during the overall process of item preparation. When items are first written, they must then be validated, trialled, revised, and reviewed until they meet standards for item banking. If proper item development procedures are in place, then the item bank contains test items characterized by a strong correspondence with identified curriculum objectives. The item bank furthermore is the file which contains validated and documented content, usage, and psychometric characteristics of each item. The focus must be on the relevance and completeness of the descriptive information about items in the bank as well as upon the items themselves stored in an item bank. Relevance and completeness of item information depends on the way the items were prepared for item banking. Item banking is not just a filing system, it is a process that places a "seal of approval" on items that merit being stored in the item bank.

4.1 Develop item banks from which tests will be generated

In preparation for the item banking system, the classification of the test items generated at the May 1995 workshop has started. A short-term consultant was contracted to identify item banking programs and to recommend a possibility for implementation. Mrs Moahi, after carefully reviewing the consultant's report, decided to postpone hardware selection until further detailed specification is completed for ERTD's total computer test processing operation, including mark reading, scoring, processing, reporting, item analysis, and item banking. Item banking is part of this overall operation. See Sub-objective 5.3 below.

Product: Dr Quansah's papers *Item Banking Management and Operational Structure* and *Item Classification System*. Dr Eno's consultancy report.
Status: Item bank software will be selected later by MOE.

4.2 Set up moderation teams to moderate and validate test items

Preliminary review of the items written at the May 1995 workshop has been completed by ERTD officers. A validation exercise involving experienced teachers and teacher trainers will be conducted by ERTD by mid-1996.

Product: Training guide materials.
Status: Not fully completed; will be completed by ERTD after BEC close-out..

Objective 5.0: Mechanism in place to analyze results of CRT tests.

Evaluator's Comments. "Analyze" is a limiting verb in this objective, "process" may be more encompassing. In any case, this is a broad terminal objective which, like the others at this level, is accomplished through the successful attainment of sub-objectives. In this instance, sub-objectives are closely connected. CRT-based test development will require new computer programs. All of the output requirements can not be stipulated until reporting formats are decided upon, and these depend upon final approval decisions about the dimensions of the test blueprint. Nevertheless, much computer program specification can be done now, with adaptations made later. Another factor to consider is that all computer processing comes under the scope of activities controlled by the Government Computer Bureau (GCB), which currently runs the certification test scoring and reporting programs. These programs will be obsolete with CRT-based assessment, so ERTD must have completely new scoring and reporting programs that serve CRT-based reporting requirements. GCB can probably not do this programming with all of the demands on its time. Yet these programs must be developed in time for use during the 1996 trial PSLE run. Mrs Moahi and Dr Quansah have taken two steps to make certain that computer programs are available when needed. They have discussed the problem with the GCB and they have requested BEC to provide a short consultancy to develop the specifications for the new programs.

5.1 Determine types of statistics and other information to be generated through the scoring system

Dr Quansah's paper *Data Processing Needs for Criterion-Referenced Examinations* addresses this sub-objective, and was used to guide part of the discussions about PSLE and JCE test scoring and processing with GCB in April 1995 and August 1995. He lists frequency distributions, means and standard deviations as desired group statistics, as well as individual raw subscores for the various papers in each subject test. Other more detailed in-house statistical analyses will undoubtedly be conducted by ERTD staff using SPSS+ application programs that they are quite familiar with.

Product: Planning paper on data processing needs and reporting statistics.
Status: Need scoring programs to be developed by consultant.

5.2 Determine the grading and reporting formats of the examination results

Dr Quansah's paper *Data Processing Needs for Criterion-Referenced Examinations* also addresses this sub-objective, and was used for in-house ERTD staff deliberation as well as for guiding discussions with GCB. Scores are to be transformed to weighted scores for each dimension in each paper, to a composite score for each dimension, and to overall grade and dimension grades. Other kinds of data to be collected include overall performance by sex, age, type of school, and district

(these kinds of stratification variables must be linked to the test sheets through registration information and students' registration numbers).

Product: Planning paper for a grading system.

Status: Need scoring programs to be developed by consultant.

5.3 Plan acquisition and installation of software for CRT processing

As discussed under Objective 4.0, Mrs Moahi requested the services of a short-term computer expert in testing systems to develop ERTD's programming specifications. The consultant requested has worked in many countries (Malawi, Lesotho, Swaziland, Jamaica) in implementing and running computer test processing and reporting systems. His consultancy was approved by the steering committee and he will be arriving in Botswana on 7 September 1995 for ten days. In the longer run, follow-on consultancy under MOE contract could include processing the 1966 PSLE test papers and training Botswana staff for 1997 PSLE processing.

Product: Computer specifications for 1996 PSLE processing and reporting programs.
Status: Completed by BEC close-out..

5.4 Plan acquisition and installation of software for item banking and test generation

This sub-objective indicates follow-up activities related to sub-objective 4.1. ERTD postponed any immediate decision regarding installation of an item banking program. ERTD has interest in an item banking program developed by Rovinelli in Lexington, Kentucky and will examine this at a later time. Mrs Moahi also will review with her staff Annie Ward's critical review of item bank programs.

Product: None yet. ERTD decision about specific item banking program to be made later.
Status: Postponed to about mid-1996.

Objective 6.0: Reports on CRT assessments prepared and reported to relevant stakeholders.

Evaluator's Comments. Dr Quansah prepared two papers, "Technical Reports on Examinations" and "Schools Report on Examinations." As for the reporting of CRT-based test performance information, ERTD may also wish to consider reviewing Appendix B in Nitko's JSEIP consultation report "Sustaining Criterion-Referenced Examinations in Botswana." He cross-classifies examples of various kinds of information about CRT-based examinations that may be reported to different stakeholders. Levels of reporting are for specific items, specific objectives or types of objectives, subtest (dimension) scores, and total scores. Important stakeholders are students/parents, teachers, headmasters/headmistresses, CDD, TT&D, Inservice.

6.1 Determine the format and content of annual technical reports to be submitted by ERTD to subject panels.

After release of examination results, the relevant ERTD testing officer should prepare a

Technical Report for presentation to subject panels. Dr Quansah's paper *Technical Report on Examinations* deals suggests what information to present. This includes (1) for Paper 1, a listing is made of matched items and objectives, with the proportion shown of candidates answering the item correctly, (2) for Paper 2, open-ended or essay syllabus objectives are presented and performance on each question is reviewed, discussed, and compared to performance the year before, (3) for Paper 3, performance on continuous assessment tasks is presented and discussed, problems are also discussed. Finally, content validity is analyzed as well as score reliabilities and reported. An in-house workshop was held in mid-August 1995 for ERTD staff. Another workshop will be held in September 1995 to develop simulated technical reports.

Product: The document *Technical Report on Examinations*
Status: Preliminary training finished but staff training is ongoing.

6.2 Update procedures for writing school reports on for distribution to teachers, TT&D

A second paper on reporting by Dr Quansah titled *Schools Report on Examinations* treats the report to be prepared by the respective officer and chief examiner in each subject. Information presented includes students' response to questions, exemplary answers, proportion correct and distractor analysis for multiple-choice tests, suggestions regarding better teaching strategies, areas of weakness and areas of strength, dimension strengths and weaknesses, and a summary of test results. The in-house workshop to be held in September 1995 will also deal with this school report issue also.

Product: The document *Schools Report on Examinations*

Status: Preliminary training finished but staff training is ongoing.

Area: Development of a CRT-Based Teacher Training Program

Objective 1.0: In-service training programs developed to ensure that teachers in the field and other practitioners acquire skills in CRT-based testing and continuous assessment.

Evaluator's Comments. This refers to ERTDs participation in CRTIC with CDD and TT&D, and with application of the "multiplier effect" training model. The multiplier effect model was necessary since these MOE staff have demanding workloads, not only in carrying out regular duties, but also in implementing a CRT-based assessment system. With the scheduled 1997 introduction of a CRT-based PSLE, teacher training duties had to be reduced for CRTIC staff. Training duties were transferred to TT&D after discussion so that ERTD and CDD staff could proceed on tasks necessary to replace traditional test development activities with CRT-based activities. The National CRT Training Program will train approximately 10,000 primary teachers by mid-1996. CRTIC will still maintain monitoring responsibilities. CRTIC's part in training was first involved in the 41-School Pilot School Project and then in monitoring the training of 2200 Standard 5 teachers by Regional Trainers.

1.1 Conduct trainers' workshops

As well as assisting in the development of the CRTIC's regional training of all Standard 5 teachers and developing the framework of the National Training Program for CRT-based assessment, Dr Quansah assisted CRTIC to produce an 89-page *Teachers Handbook on Criterion-Referenced Testing and Continuous Assessment*. The fourth draft was completed in September 1994. It contains three modules with three units each, which are covered in one week in the National Training Program. Details of the training program are written up in the document *Changing Classroom Assessment and the National Examination System to Criterion-Referenced Testing* (July 1995). A decision was reached for members of CRTIC to develop a plan to train all Standard 5 teachers. This was to be done through CRTIC's training of a cadre of Regional Trainers consisting of Education Officers (EOs), Senior Education Officers (SEOs), In-Service EOs, Teacher Advisers, and Primary Teacher Training Lecturers. Before the training of trainers, CRTIC held a CRT seminar Principal Research Officers (PEOs) in Gaborone in September 1994. Two 3-5 day workshops were held to train the 80 selected Regional Trainers, the first in September 1994 and the second in October 1994. Both workshops were also attended by lecturers from Primary Teacher Training Colleges. Altogether 80 Regional Trainers were trained by CRTIC members at these workshops.

Outcome: Eighty Regional Trainers were trained in CRT assessment by CRTIC.

Status: Completed first phase training of 80 Regional Trainers completed in October 1994.

1.2 Supervise and update trainers conducting in-service workshops for teachers and MOE practitioners in CRT

A Regional Training Coordinators' meeting was held in April 1995. Seven members of CRTIC and all five Regional Coordinators attended. Content and administrative problems were discussed. These included difficulties in mapping syllabus objectives, in item preparation, and in item review. These discussions formed a basis for planning further training programs held in July 1995 for three regional teams in Francistown and for the remaining two regional teams in Gaborone.

Outcome: Updated training for the 80 Regional Trainers was planned at a coordinators' meeting in April 1995 and the updated training programs were completed in July 1995.

Status: Completed updated training of 80 Regional Trainers in July 1995.

1.3 Supervise the training of Standard 5 teachers

1.4 Supervise the training of primary headteachers

Sub-objectives 1.3 and 1.4 were achieved simultaneously. The 80 Regional Trainers described in 1.1 above were given responsibility to train all Standard 5 teachers and primary school headteachers in Botswana. Five regional training teams were formed and a regional coordinator named for each. Regional training started in October 1994, monitored by CRTIC members. By the end of May 1995, all Standard 5 teachers (N=1567) and primary headteachers (N=406) had completed first-phase CRT training.

It also needs mention that CRTIC's 41-School project involved about 250 Standard 5 teachers. This project was underway when Dr Quansah arrived.

Outcome: CRTIC supervised first-phase CRT training for all Standard 5 teachers (N=1567).
Outcome: CRTIC supervised first-phase CRT training for primary headteachers (N=406).
Status: Completed supervision objectives. Now moving ahead to National Training Program.

1.5 Monitor the training of Resource Persons for the National Training Program

The first step in implementing the National Training Program will be to train 700 Resource Persons in CRT assessment procedures. As mentioned earlier, the training of Resource Persons by TT&D will start in September 1995 and is expected to be completed by March 1996. These Resource Persons are the key to training all primary teachers. CRTIC will monitor the program. Details of the national training plan developed by Dr Quansah and members of CRTIC, including the identification of the Resource Persons, were worked out in two July 1995 updating workshops.

Outcome: National Training Program for all primary teachers adopted.
Outcome: TT&D heavily involved.
Status: Training of Resource Persons by TT&D will start in September 1995.

1.6 Plan and conduct CRT workshops for in-service trainers

A meeting with secondary in-service officers was held by CRTIC in June 1994 to discuss CRT-based training workshops for in-service trainers. The meeting dealt with orientation planning and possible scheduling. A decision was taken to postpone the start of training until January 1996.

Outcome: Nothing yet except preliminary planning session with secondary in-service officers.

Status: Postponed until January 1996 start.

1.7 Plan participant training for ERTD staff

A training program for the former RTC and Exams Unit staff had been planned by CD&E when the BEC team arrived. The first two staff members who went on training -- Ms Kathleen Letshabo and Mrs Theresa Mmualefe, were included in this scheduled plan sponsored by BEC. Dr. Quansah assisted Mr. Augustines Utlwang, the third participant, in identifying a course program that would be pertinent for his MA work in examinations administration. Mr Utlwang later switched to Educational Measurement for greater work flexibility. The fourth participant in the training program was Ms Gasemotho who was selected from the RTC for a six-month short course in educational measurement.. The list of ERTD staff who have been trained under the BEC program is as follows:

Ms Kathleen Letshabo, University of Pittsburgh	Aug 1993	BA Continuing on MA
Mrs Theresa Mmualefe, University of Pittsburgh	Aug 1993	MA May 1995.
Mr Augustines Utlwang, University of Pittsburgh	Jan 1994	MA End of 1995
Ms Chenzimu Gasemotho, Florida State University	Jun 1994	Six months Dec 1994

Outcome: Four ERTD persons sent on participant training.

Status: Two returned to post, one with MA, two continuing on MA

1.8 Plan Study Visits for ERTD staff

Two study visits were sponsored by BEC. One was to the Kenya National Examinations Council (KNEC) in Nairobi, and the second was to the West African Examinations Council (WAEC) in Accra, were sponsored by BEC in 1994. The visiting team to KNEC (September 12-16 1994), was comprised of Mrs Limakatso Charakupa and Mrs Janet Gaobakwe. The visiting team to WAEC (September 23-30 1994) was comprised of Mrs Serara Moahi and Mr Joe Tshimako.

ERTD also requested BEC sponsorship for attachment to external examination boards, particularly the University of Cambridge Local Examinations Syndicate (UCLES) and the Joint Matriculations Board (JMB) at Manchester. The two boards had been identified with the assistance of the BEC advisor as organizations which operate criterion-referenced examinations with continuous assessment (covering objective tests, essay tests and practical tests). Both UCLES and JMB indicated that they would not be able to accommodate staff on attachment until the winter and summer months of 1996. The attachments, if they will be undertaken at all, will be outside of the BEC project.

Outcome: Four persons sent on short study visits; two to two different locations.
Status: Completed.

1.9 Continue in-house training courses in measurement and technical report writing

The seminar sessions of one and one-half hours per week started in November 1993 and continued through February 1994. These could not be sustained within the heavy work schedule of ERTD. RTC and the Examinations Unit (now ERTD which combined the two offices), must develop, administer, score, and report results for the annual Standard 4 Attainment Tests, the PSLE, and the JCE. Other examinations work is also carried out -- the administration and scoring of tests for the selection of candidates for the Primary Teacher Training Colleges (PTTCs), the National Health Institute, the Botswana Institute for Administration and Commerce (BIAC), as well as serving as administrators of TOEFL, SAT, ACT, and graduate admissions tests to candidates seeking admission to universities in the United States. In view of this, in-house training has been conducted through seminars and workshops, the dates for which are periodically determined by ERTD.

Product: Various training and hand-out materials and handouts.
Status: Continuing.

1.10 Plan and conduct training of computerized item bank clerk.

Product: None
Status: Not started. Will be carried out by ERTD after BEC close-out.

ERTD/BEC Reports and Papers

A. In-House Seminars and Workshops for ERTD & CRTIC

1. Comparative Implications of Norm-Referenced Tests and Criterion-Referenced Tests. Presented at Seminar for CD&E and TT&D, August 31, 1993
2. Criterion-Referenced Test Construction and Interpretation. Paper Presented to Second Year Students of the Molepolole College of Education, September 7, 1993
3. Multiplier Effect Strategy for the Training of Teachers in Criterion-Referenced Testing and Continuous Assessment. Paper Presented to the Meeting of the Criterion-Referenced Planning Committee, February 1994
4. Organizing Curriculum Related Tasks for Classroom and National Examinations. Paper Presented at Workshop organized by the Curriculum Development Division, August 11, 1994.
5. Using Test Data for Curriculum Evaluation. Paper Presented at Meeting of ERTD, October 27, 1994
6. Structure of Examination Papers. Paper Presented at Workshop Organized by ERTD, February 14, 1995
7. Baseline Data Research on Criterion-Referenced Testing and Continuous Assessment. Paper Presented to the Criterion-Referenced Testing Implementation Committee (CRTIC), June 1994.
8. Assessment Plan for Junior Certificate Examination (JCE). Paper Presented at Joint Meeting of the Curriculum Development Division (CDD) and the Examinations, Research and Testing Division, March 3, 1995.

B. Training Workshops for Educational Officers and Primary School Teachers in Criterion-Referenced Testing

1. National Training Plan for Teachers and Ministry of Education Personnel in Criterion-Referenced Testing and Continuous Assessment. Paper Presented at the Consultative Seminar Organized by the Criterion-Referenced Implementation Committee (CRTIC) for Principal Education Officers, June 14-16, 1994.
2. Criterion-Referenced Test Assembly. Paper Presented at the "Training the Trainers

Workshop", September 5-9, 1994

3. **Teachers' Handbook on Criterion-Referenced Testing and Continuous Assessment.**
Contributor, with members of CRTIC, September, 1994.

C. Course Revisions

1. Revised Course in "Measurement and Evaluation of Students' Performance" for Colleges of Education (Draft). Presented to Department of Teacher Training and Development, August, 1994
2. Revised Course in "Measurement and Evaluation of Students' Performance" for Primary Teacher Training Colleges (Draft). Presented to Department of Teacher Training and Development, August 1994.

D. The National Examinations System (PSLE and JCE)

1. Criterion-Referenced Examinations Scoring and Grading System. Paper Presented at Joint Meeting of ERTD and Government Computer Bureau, March 29, 1995.
2. Guide for the Structure, Organization and Implementation of Senior Secondary School Examinations in Botswana. Presented to the Ministry of Education, USAID and AED, April 1995.
3. Using Test Blueprints and Test Dimensions for Constructing Criterion-Referenced Tests. Paper Presented at Item Writing Workshop, May 1-5, 1995
4. Changing Classroom Assessment and the National Examination System to Criterion-Referenced Testing. Contributor to Paper Presented at the BEC Quarterly Meeting held on July 12, 1994
5. Technical Reports on Examinations. Paper Presented at ERTD Seminar, August 9, 1995.
6. Test Blueprints and Test Dimensions for Constructing and Interpreting Criterion-Referenced Tests. Paper Written for ERTD Seminar to be held in September 1995.
7. Schools Reports. Paper Written for ERTD Seminar held on September 1, 1994

E. Presentations to MOE and Related Bodies

1. Implications of Criterion-Referenced Testing and Norm-Referenced Testing, by Kofi Quansah and Serara Moahi. Paper Presented to the National Committee on Education, April 1993.
2. Differences Between Criterion-Referenced Testing and Continuous Assessment.,

Information Paper Written for USAID, Gaborone, October 1993

3. Research and Consultancy within the BEC Project. Paper Presented at the BEC Team Retreat, November 8-9, 1993
4. Report on Junior Certificate Examinations in Three Examination Centres. Report Written with ERTD staff for the Ministry of Education, January 1994
5. Issues in Criterion-Referenced Testing. Paper Presented at the Conference on Accreditation and Equivalence of Qualifications and Criterion-Referenced Testing, organized by the Dept. of Vocational Education and Training, Gaborone, February, 1995.

Short Term Consultant Eric Eno. Terms of reference for Eric Eno's consultancy, carried out 10-22 July 1995, were to develop objective criteria for the evaluation of item banking, item analysis, and test scoring software; to evaluate available software and design a computer configuration for implementing this; to develop data transfer mechanisms from scanning to item analyses; to review samples of work done in ERTD; and to develop a plan for the introduction of computerized item banking in ERTD. The consultant knows MIS computer operations, but not the particularized needs of a computerized test scoring and reporting operation. Eric Eno's planned second consultancy was deferred, replaced by Mrs Moahi's request to BEC to obtain the short-term services of Dr Richard Johnson. He is to work primarily with ERTD staff but also consult with professional staff of the Government Computer Bureau (GCB) to develop specifications for a single generalized and integrated scoring and reporting system customized for ERTD. Training demands of the system will be minimized, and the system must cover ERTD's entire examination process. Dr Johnson will review proposed specifications in detail with ERTD staff and with GCB to determine the most efficient and cost-effective options for implementation. Work must be completed before the end of the BEC contract; the USAID Project Manager and the BEC COP have speedily expedited the request for Mrs Moahi. Dr Johnson is expected to arrive in Botswana on 7 September 1995.

Short Term Consultant: Dr Anthony Nitko June 1993. Early in the project, Dr Anthony Nitko carried out two short-term consultancies. At that time the Department of Curriculum Development and Evaluation (CD&E) included the Curriculum Development Unit (CDU) and the Research and Testing Center (RTC). His first BEC consultancy in June 1993 was an evaluation of CRTIC's criterion-referenced testing implementation plan. He also noted that by 1992, a great deal of work had gone into understanding details of CRT development, and a model for CRT development appeared in the Third Biennial Report 1989-1991.

CRTIC's plan was considered by Dr Nitko to be an excellent one for aligning the curriculum, teaching, and assessment, at least for the 41 schools in CRTIC's pilot school project. CRTIC activities --visiting schools three times a year to audit teachers' lesson plans, reviewing scheme books, observing teaching, and discussing findings with teachers and headteachers, were felt to have a positive effect. He recommended that the Research and Testing Center prepare periodic school reports that describe the degree to which schemed curriculum objectives at the school are learned. Dr Nitko believed that CRTIC's focus on national tests should be on the Junior Certificate Examination (JCE). But CRTIC had elected to work with the PSLE at the primary level because it was no longer a "high stakes" examination used for selection, and because the primary curriculum was completed which was not true at the junior secondary level where the change from a two-year to a three-year curriculum was anticipated. Dr Nitko's recommendations supported continued development of end-of-term tests, use of machine readable forms for recording school visit data, reconceptualizing the PSLE so that it provides useful information, finishing the *Teacher's Manual for Criterion-Referenced Assessment*, and establishing a strong linkage with the continuous assessment coordinator in the Department of

Teacher Education.

Short Term Consultant: Dr Anthony Nitko: October 1993. Dr Nitko's second consultancy in October 1993 anticipated human and fiscal resource needs as the shift to CRT and continuous assessment takes place. Three recommendations are general -- (1) MOE should provide human and fiscal resources; (2) a commitment should be reaffirmed and priorities set regarding curriculum-based CRT, CRT continuous assessment, curriculum evaluation using a CRT student performance data base, and curriculum evaluation using CRT end-of-term tests; and (3) a CRT planning committee could be redefined so that it was external to CD&E.

Four recommendations pointed to developing a curriculum-based criterion-referenced JCE in the near future. Nine recommendations related to continuous assessment training and coordination with TT&D. Seven dealt with the development of a curriculum evaluation data base stemming from use or not of end-of-term tests. Four recommendations were concerned with curriculum development officers' involvement with the setting of end-of-term tests. Four dealt with new roles and responsibilities for CDU officers.

CRTIC did not immediately implement these recommendations but suspended action until further study was made. The recommendations were seen as having value in the long term when the JCE would become CRT-based. Work in the 41 schools was only recently underway, so CRTIC members were pressed with the need to plan CRT reporting for end-of-term tests, to introduce quality procedures for CRT and continuous assessment, to refine staff training in CRT and continuous assessment, and to conceptualize ways in which continuous assessment grades might be incorporated with PSLE and JCE results. The recommendations listed in Dr Nitko's second consultancy report will not be permanently shelved, since they are expected to be relevant in future.

Short Term Consultant: Winston Mtekateka. Winston Mtekateka is employed as a Computer Consultant to develop various dBase files including those for inservice trainers, CRTIC members, and preservice trainers; to enter end-of-term test scores for students in the 41 School Pilot Project, and to develop a database structure for the CRT Baseline Research Plan. He is now finishing three reports due the end of August: (1) Standard 5 End-of-Term Test Results and Analysis (Term 1 1964; (1) Standard 6 End-of-Term Test Results and Analysis (Term 1 1964; and Data Entry Programs for CRT. Further work in completion of his consultancy will be to finish the research program database and to train ERTD's data entry personnel.

MOE Staff Development

This area relates to Goal 6 in the evaluation's scope of work and particularly to Tasks 6, 7, and 14 under Goal 6. The BEC Advisor was involved with CRTIC staff in its training activities. Eight ERTD reports or papers were prepared for in-house seminars and workshops, three course revisions were prepared for TT&D, seven papers dealing with the national examinations system (PSLE and JCE) were prepared, and five presentations were prepared for the MOE, the National Committee on Education, USAID, and other related bodies.

Goal 6. Strengthen the educational service capacity of the MOE through short- and long-term training.

Task 6. To assess the extent and type of in-house staff training provided to EOs by BEC advisors and consultants, and the effectiveness of the EOs in implementing their training.

In-House Training. Dr Quansah provided timely and on-going assistance to CRTIC and ERTD staff through helping them organize in-house seminars. These (about one and one-half hours per week) were held from November 1993 through February 1994. Staff workloads intervened so that periodic ERTD seminars and workshops are now held on dates determined by ERTD.

CRTIC developed the *Teachers Handbook on Criterion-Referenced Testing and Continuous Assessment* for use in the 41 School Pilot Program. CRTIC members trained 80 regional trainers; the 80 regional trainers, supervised by CRTIC, trained 1567 Standard 5 teachers and 406 headteachers. CRTIC then trained 80 Level 2 trainers in TT&D who are about to start training 700 Resource Persons (one per primary school); the Resource Persons will then train the other nearly 7000 teachers in the primary schools. Resource Persons are key actors in the training model, so evaluation and upgrading of their activities is continually necessary. All trainers and trainees get a copy of the *Teachers Handbook*.

Goal 6. Strengthen the educational service capacity of the MOE through short- and long-term training.

Task 7. To assess short-term and long-term training, both in-country and international, and the appropriateness of this training for the positions held.

Participant Training. A training program for former RTC and Examinations Unit staff had already been planned as part of a CD&E training effort at the time of the arrival of the BEC team. The first two staff members who went on training -- Ms Kathleen Letshabo and Mrs Theresa Mmualefe, were therefore part of a CD&E scheduled plan which was sponsored by BEC. Dr Quansah assisted Mr Augustines Utlwang, the third participant, in identifying a course program that would be pertinent for his work in examinations administration. Mr Utlwang later decided to change his program to Educational Measurement since he believed that would give him greater work flexibility. The fourth participant in the training programme was Ms Gasemotho who was selected from RTC for a six-month course in measurement at Florida State University.

The list of ERTD staff who have studied under the BEC training program is as follows:

Ms Kathleen Letshabo at the University of Pittsburgh began study in August 1993. Kathleen had to complete her bachelor's degree before getting into the masters program in 1995. With BEC closure, the Ministry of Education will be responsible for her completion of the masters degree in Educational Measurement.

Mrs Theresa Mmualefe started her masters degree course at the University of Pittsburgh in August 1993 and successfully completed the Educational Measurement program in May 1995. She has since returned to her position on the staff of ERTD.

Mr Augustines Utlwang is at the University of Pittsburgh, starting a masters degree program in Educational Measurement in January 1994. He is due back to his post in ERTD at the end of 1995.

Ms Chenzimu Gasemotho started a six-month course in Educational Measurement at Florida State University in June 1994. This was completed in December 1994, and she has since returned to her post in ERTD.

Study Visits for ERTD Staff. Study visits to the Kenya National Examinations Council (KNEC), Nairobi, and the West African Examinations Council (WAEC), Accra, were sponsored by BEC in 1994. The visiting team to KNEC (September 12-16, 1994) was comprised of Mrs Limakatso Charakupa and Mrs Janet Gaobakwe. The visiting team to WAEC (September 23-30, 1994) was comprised of Mrs Serara Moahi and Mr Joe Tshimako.

ERTD also requested BEC sponsorship for attachment to external examination boards, the University of Cambridge Local Examinations Syndicate (UCLES) and the Joint Matriculations Board (JMB) at Manchester, also in the United Kingdom. The two boards had been identified with the assistance of the BEC advisor as organizations which operate criterion-referenced examinations with continuous assessment (covering objective tests, essay tests and practical tests). Both UCLES and JMB indicated that they would not be able to accomodate staff on attachment until the winter and summer months of 1996. The attachments, if they will be undertaken at all, will be outside of the BEC project.

Goal 6. Strengthen the educational service capacity of the MOE through short- and long-term training.

Task 14. To assess the impact of short-term and long-term training (in-country and international) on EO job performance..

Long-term training effects can be expected to have significant impact on work within ERTD.

The evaluator had worked in JSEIP with two of the three trainees and has long regarded both as talented and hard-working. Dr Nitko's influence through the long-term study programs at the University of Pittsburgh will in yet another way positively influence the implementation of CRT-based assessment. The graduate study program in Anthony Nitko's department at the University of Pittsburgh is very demanding. Degrees earned are valid evidence of solid graduate level achievement. Furthermore, the trainees will have acquired state of the art capabilities in CRT assessment. This was reinforced in a conversation with Mrs Seodi Khama, the Education Officer in the Embassy of Botswana in Washington who oversees the training programs. The impact of short-term training is more difficult to pinpoint. Short visits to sites where successful operations are conducted is presumed to have conceptual and inspirational value of some kind in at least two ways: (1) visitors learn that tasks needed to be done by them can actually be implemented, and (2) some observed tasks may be perceived as inappropriate and therefore disregarded.

Project-Related Outputs.

This is concerned with commodities transferred to ERTD, with committee functions, and with the relevancy and acceptance of reports and papers.

Task 5. To assess the proficiency of Education Officers (EOs) in the use of project-provided commodities such as computer and video equipment, photocopiers, and books in the production of curriculum materials.

Most technical and administrative staff in ERTD (formerly RTC and the Examinations Unit) are familiar users of Macintosh computers, with word processing applications like Word 5.1 and Pagemaker, and with the Superpaint graphics program. Mrs Moahi, Theresa Mmualefe, and Kathleen Letshabo are also familiar with IBM-type PCs, with item analysis programs such as Iteman and Rascal developed by Assessment Systems in Saint Paul, and with the SPSS statistical data analysis package developed by SPSS Inc in Chicago. There has been plenty of past practice in using these applications and there will be plenty of future opportunity to apply their skills in preparing camera ready copy of tests, in post mortem analysis of test results, and in the preparation of technical reports of test results.

ERTD is looking ahead to receipt of equipment supplied by BEC, since it facilitates efficient production. The equipment and estimated values are listed below.

Eleven (11) Macintosh Desktop Computers		
Four	(4) Macintosh Powerbooks	
Two	(2) IBM-type Desktop Computers	
	Computer Value	P 161292
One	(1) Large Photocopier	
Two	(2) Desktop Photocopiers	
Three	(3) Overhead Projectors	
One	(1) Binder	
Three	(3) Shredders	
	Equipment Value	P 61595
	Total	P 222887

Additional items are a Lazerjet Printer for the IBM-type PCs, a Laserwriter Printer for the

Macintoshes, network cards, and Macintosh software packages SPSS, Microsoft Excel, Aldus Superpaint, Symantec Antivirus Protection, and MacDraw Pro.

Task 12. To assess the functioning of standing committees to guide the implementation of the BEC project. These committees include the BEC steering committee (reference group), the Participant Training Committee, and the Basic Education Implementation Committee.

All EOs in ERTD must necessarily be members of Subject Task Forces, since they are involved in setting test items. The main working committee for ERTD is CRTIC. ERTD staff have eight members on CRTIC and also serve as Chair and Secretary.

Reports and Papers. This considers papers prepared within ERTD.

Task 13. To assess the effectiveness of relevant publications and reports connected with BEC, their distribution, acceptance, and use by intended audiences.

ERTD's collaborative papers prepared by Mrs Moahi, Dr Quansah and ERTD staff made a significant contribution to the dissemination of news about CRT assessment. The seven more important documents, in the evaluator's opinion, are listed below. The first compares a norm-referenced and a criterion-referenced technology for test construction. The next two on the list develop the large scale training plan set in place by CRTIC and the CRT handbook that will be a resource in every school. The fourth paper relates to curriculum evaluation, an issue addressed later. The fifth paper explains the CRT training program to PEOs who were instrumental in implementing CRTIC's regional training plan. The sixth considers the test blueprint which sets the stage for CRT implementation. The seventh and eighth papers address changes in TTC coursework needed for CRT preservice training.

- Implications of Criterion-Referenced Testing and Norm-Referenced Testing, by Kofi Quansah and Serara Moahi. Paper Presented to the National Commission on Education, April 1993.
- Multiplier Effect Strategy for the Training of Teachers in Criterion-Referenced Testing and Continuous Assessment. Paper Presented to the Meeting of the Criterion-Referenced Planning Committee, February 1994
- Teachers' Handbook on Criterion-Referenced Testing and Continuous Assessment. Contributor, with members of CRTIC, September, 1994.
- Using Test Data for Curriculum Evaluation. Paper Presented at Meeting of ERTD, October 27, 1994
- National Training Plan for Teachers and Ministry of Education Personnel in Criterion-Referenced Testing and Continuous Assessment. Paper Presented at the Consultative Seminar Organized by the Criterion-Referenced Implementation Committee (CRTIC) for Principal Education Officers, June 14-16, 1994.
- Using Test Blueprints and Test Dimensions for Constructing Criterion-Referenced Tests. Paper Presented at Item Writing Workshop, May 1-5, 1995
- Revised Course in "Measurement and Evaluation of Students' Performance" for Colleges of Education (Draft). Presented to Department of Teacher Training and

Development, August, 1994

- Revised Course in "Measurement and Evaluation of Students' Performance" for Primary Teacher Training Colleges (Draft). Presented to Department of Teacher Training and Development, August 1994.

Institutional Change and Sustainability

Task 9. To assess the extent of MOE's implementation of project consultant's recommendations.

In the evaluator's estimation, the project was appropriately-designed in the sense that project planners understood that BEC's assessment component was to assist in developing a CRT framework for certification testing and continuous assessment. Sweeping design goal statements needed clarification which was provided by Dr Quansah and ERTD in developing collaborative workplans. Dr Quansah was the right person for the Educational Measurement Specialist position; he showed insight, worked well with ERTD counterparts, and displayed a high level of productivity. Working within the ERTD agenda, he completed targeted objectives that were possible within the curtailed time frame, and went as far as possible on those left incomplete. We must remember that ERTD and MOE set the agenda and the schedule; Dr Quansah's role was advisement and not line officer supervision.

As for short-term consultancies, Mr Eno's item banking consultancy report was valuable because it alerted ERTD staff to the need to act now to begin changing its entire CRT-based computer scoring and reporting operation. Credit is due to the USAID Project Manager and the AED Chief of Party who speedily arranged to squeeze in an extremely important planning consultancy by Dr Richard Johnson before BEC's close-out. Dr Nitko's recommendations have been deferred until the context of CRT implementation becomes clearer. ERTD must in 1997 face the NRT-to-CRT switchover of the JCE. CRTIC's decision is prudent.

Task 15. To assess the sustainability of BEC outputs in the light of the early project close-out

Sustainability is an adjective often applied to describe what the MOE is likely to continue doing after a project ends. In a support contract like BEC, where the host MOE sets the goals, the agenda, and the schedule, sustainability is really not something BEC achieves. Sustainability means that after BEC leaves, the MOE will continue to set its goals, agenda, and schedule which retain BEC-introduced influences. To the extent that BEC provided feasible and helpful suggestions, helped create needed products, or refined new ideas, then these are the activities that facilitate program continuation.

ERTD, CDD, and TT&D are implicated together in the development of CRT-based assessment. CDD's curriculum informs teachers what is to be tested, TT&D prepares teachers to teach the curriculum, ERTD is the technical arm of the MOE that constructs CRT-based tests that serve the information needs of students, teachers, teacher trainers, curriculum developers, and MOE policy makers. Determining these information needs requires consolidated work by CDD, TT&D, and ERTD. Consolidation needs to be cemented by linked and interdependent work

activities across departments. Early BEC close-out should not slow down ERTD's schedule for setting the 1996 trial CRT-based PSLE and the official 1997 CRT-based PSLE. Furthermore, a completely new computerized scoring and reporting system will be implemented by ERTD after BEC. Attention to the design of a continuous assessment model will be an expected natural outgrowth of the training of Resource Persons. Returning long-term trainees have strengthened ERTD and those yet to return will further technically strengthen the division.

Conclusions

ERTD and CRTIC initiatives made significant progress on two broad programmatic fronts. These were (1) development of a CRT-based teacher training program and (2) development of a CRT-based certification testing program. All Standard V teachers and nearly all primary school headteachers have had the first phase of CRT training. The "multiplier effect" training plan, applied by CRTIC and adopted by TT&D, will train approximately 700 Resource Persons (one per primary school), will start next month, and by mid-1996 bring first-phase CRT training to all primary teachers.

There has been extensive in-house self-study in ERTD. Concepts are developed and detailed in several ERTD/ BEC papers. Long-term staff training can certainly be expected to have long-term pay-off. Three ERTD staff have or will receive Master's Degrees in Educational Measurement from the University of Pittsburgh. One ERTD staff member attended a six-month short course in Educational Measurement at Florida State University. Four ERTD staff made one-week study visits, two to the West African Examinations Council in Accra and two to the Kenya National Examinations Council in Nairobi.

CRT-based certification testing started with work on the PSLE. Test blueprints are nearly ready for CDD approvals. An item writing workshop produced approximately 950 potential PSLE test items for review and editing. Mrs Moahi, with strong backing from the USAID Project Manager and BEC's Chief of Party, has taken steps to insure that an entirely new computerized test scoring and reporting operation will be in place for the 1996 trial CRT-based PSLE. Computers, software, and production equipment that ERTD is receiving from BEC will be welcomed and effectively used by staff who are very proficient in the use of word processing and graphics programs.

Dr Quansah listed twenty-five (25) sub-objectives in his revised workplan. These as discussed are shared ERTD/BEC objectives. Thirteen (13) will be completed by project close-out, three (3) are partially completed, four (4) have been postponed by ERTD's agenda, four (4) have to do with the work of the computer consultant, and one (1) was not started. This reflects substantial achievement. Twenty-five sub-objectives and their status at project close-out are listed on the next page.

If the BEC early close-out had not occurred, this report would quite properly be a mid-project formative evaluation. Given the evidence obtained for the assessment component, anyone would consider the amount and quality of work done by ERTD staff as exemplary. There is a downside, however. CRT is still a somewhat confusing concept to many teachers and even teacher trainers. This should be expected, but it can slow the pace of CRT infusion if not dealt with. This is puzzling because the CRT concept is so simple: (1) tests are built that contain items corresponding to important curriculum objectives; (2) objectives are framed in terms of

information needs of users; (3) tests are scored so that the item-objective connections are retrievable for reporting; (4) users of reported information are enabled to do their work better.

The item banking consultancy had no positive immediate pay-off but great incidental pay-off. Dr Nitko's consultancy led to recommendations that did not come into immediate play but will later. The lesson to be learned is that the need for a consultancy must emerge from within the MOE, and this need has to be translated into a specific scope of work prepared by the MOE, and that the consultant must address the specified need.

Area: Development of a CRT-Based Certification Testing Program

Objective 1.0: Norm-referenced PSLE replaced with criterion-referenced tests by 1996-97

- | | | |
|-----|---|------------------|
| 1.1 | Develop CRT PSLE and JCE activity schedule | Partly completed |
| 1.2 | Review manual of examinations administrative procedures | |
| 1.3 | Plan examining personnel records system | Completed |
| 1.4 | Develop marker evaluation system | Completed |

Objective 2.0: Test blueprints for PSLE subjects developed.

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|-----|---|------------------|
| 2.1 | Select and develop uniform titles for learning behaviors to be used for diagnostic CRTs | Completed |
| 2.2 | Develop test blueprints and test plans for PSLE subjects | Partly completed |

Objective 3.0: Performance standards for grade awards established

- | | | |
|-----|--|--------------------------|
| 3.1 | Using established procedures for standard setting, establish the performance standards for grades A, B, C, D, for the PSLE | Postponed till late 1996 |
|-----|--|--------------------------|

Objective 4.0: Validation mechanism established to link CRT tests to syllabus objectives

- | | | |
|-----|---|-------------------------|
| 4.1 | Develop item banks from which tests will be generated | Postponed till mid 1996 |
| 4.2 | Set up moderation teams to moderate and validate test items | Partly completed |

Objective 5.0: Mechanism in place to analyze results of CRT tests.

- | | | |
|-----|--|---------------------|
| 5.1 | Determine types of statistics and other information to be generated through the scoring system | Computer consultant |
| 5.2 | Determine the grading and reporting formats of the examination results | Computer consultant |
| 5.3 | Plan acquisition and installation of software for CRT processing | Computer consultant |
| 5.4 | Plan acquisition and installation of software for item banking and test generation | Computer consultant |

Objective 6.0: Reports on CRT assessments prepared and reported to relevant stakeholders.

- | | | |
|-----|--|-------------------|
| 6.1 | Determine the format and content of annual technical reports to be submitted by ERTD to subject panels | Completed/ongoing |
|-----|--|-------------------|

- 6.2 Update procedures for writing school reports on for distribution to teachers, TT&D
Completed/ongoing

Area: Development of a CRT-Based Teacher Training Program

Objective 1.0: In-service training programs developed to ensure that teachers in the field and other practitioners acquire skills in CRT-based testing and continuous assessment.

- | | | |
|------|---|-----------------------|
| 1.1 | Conduct trainers' workshops | Completed |
| 1.2 | Supervise and update trainers conducting in-service workshops for teachers and MOE practitioners in CRT | Completed |
| 1.3 | Supervise the training of Standard 5 teachers | Completed |
| 1.4 | Supervise the training of primary headteachers | Completed |
| 1.5 | Monitor the training of Resource Persons for the National Training Program | Postponed till SEP 95 |
| 1.6 | Plan and conduct CRT workshops for in-service trainers | Postponed till JAN 96 |
| 1.7 | Plan participant training for ERTD staff | Completed |
| 1.8 | Plan Study Visits for ERTD staff | Completed |
| 1.9 | Continue in-house training courses in measurement and technical report writing | Completed/ongoing |
| 1.10 | Plan and conduct training of computerized item bank clerk | Not started |
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CHAPTER 5. FINDINGS SUMMARIZED

BEC had its genesis in the 1983 MOE policy pronouncement regarding its intent to expand the junior secondary school system and to move toward an integrated curriculum for nine years of basic education. PEIP, a ten-year project (1981-1991), focused upon the development of primary teacher training and JSEIP (1985-1991) addressed curriculum development for the new Junior Secondary schools. The purpose of BEC was to continue assistance to the MOE in its goal of developing a consolidated and integrated system of basic education through a single project which would have as its holistic focus a system of basic education which was defined for project purposes as encompassing curriculum development, teacher education (both pre- and in-service) and the assessment of student achievement. In the view of the Evaluation Team, the purposes of BEC related logically to established MOE goals and plans and represented a valid continuation of USAID support to basic education in Botswana.

In considering BEC from the perspective of USAID's Strategic Objective 1: "Increase the level of relevance of what students learn, their receptivity to additional training, and their preparedness for further education", the team concludes that this broad objective was addressed through the project but that the early shut down of the project precludes making absolute judgments about what the final project outcomes might have been. The USAID strategic objective was predicated on two program outcomes. These are Outcome 1.A: Increased proportion of students who are offered the new curriculum and pedagogic materials, instructed by teachers trained to apply them, and Outcome 1.B: System established to provide feedback on student learning achievement to pupils, teachers, parents, policy makers, and private sector.

The evaluation team is of the view that BEC was well on its way to accomplishing these two program outcomes when it was terminated. Solid groundwork has been set in place for accomplishing and sustaining these two objectives. Junior Secondary core subject syllabi, the first step in bringing change to the curriculum in the classroom, have been developed and the accompanying teacher and student curricular materials are in the process of preparation. Pre-service teachers in the PTTCs and the COEs and practicing teachers are being trained in the use of these new materials. Progress is well underway in the development of a system to provide meaningful feedback on student performance.

Many indicators suggest that various contributions of BEC and the forerunner projects (PEIP and JSEIP) are embedded in the Botswana system of basic education. This is primarily because of the "fit" between the externally funded projects and the basic education goals which the MOE had established for the nation. BEC and the earlier projects did not establish education policy; rather, they appear to have been accepted by the GOB as resources which could assist the country in moving toward its larger goal of greater educational opportunity for all.

Possibly BEC could have been better designed and executed. The omission of the

University of Botswana Faculty of Education from a more integrated role in BEC is judged to be a significant oversight. The project would also have been better served had the materials production advisor been a part of the BEC advisory team from the beginning. The period taken for the needs assessment might have been shortened; participants could have been identified and sent for study earlier in the project; and earlier commodity acquisition would have provided more training time in the use of computers for desk-top publishing and other purposes. And finally, we wish that the BEC team had been able to model within itself more of the spirit of cooperation, communication and collaboration which it was seeking to foster within the MOE.

This section summarizes findings for curriculum development, teacher training, and student assessment. Findings point to the accomplishment of shared MOE/BEC objectives. BEC's objectives are explicated in several documents, notably the BEC Basic Education Consolidation Project Paper, the Project Grant Agreement between the Government of Botswana and the United States of America for the Basic Education Consolidation Project, the Contract between USAID and the Academy for Educational Development (the institutional contractor), advisors' job descriptions contained in the AED contract, the Report of the Needs Assessment for Basic Education Consolidation in Botswana, and the advisors' initial and revised workplans.

Curriculum Development

Findings of the evaluation for the Curriculum Development Division strongly suggest that BEC, even with its shortened life, has made a very substantial contribution to its goal of enhancing "the established system to plan, produce, disseminate and evaluate a relevant, improved quality, ten year basic education program." Findings support that judgment even while acknowledging that some targets were not reached or were not as fully accomplished as the parties to the undertaking would have liked.

Objectives for BEC's support of curriculum development fall under four categories. These are objectives related (1) to curriculum products and materials development, (2) to curriculum processes and structures for improving the quality of the curriculum, (3) to research and evaluation, and (4) to training. Curriculum as product refers to the production of syllabi and instructional materials. Curriculum as process refers to the curriculum development and dissemination processes, but also includes teacher education and training for implementing the curriculum in classrooms, and the assessment of learning effects when the curriculum is taught. Curriculum processes as well as curriculum products are treated as curriculum development outputs.

Curriculum Products and Materials

An outstanding accomplishment is CDD's development of the new three-year junior secondary syllabi for six core subjects and one optional subject to be introduced in the schools in January 1996. This is a centerpiece for curriculum-teaching-assessment consolidation. BEC input support in the form of advice, training, computer equipment and materials production played a strong assistance role in syllabi development.

The syllabi are notably well-organized, each includes a rationale for the subject, overall aims of the ten year program, aims of the ten year subject syllabus, aims of the three year subject syllabus, student assessment information and instructional time allocation (periods per week). Syllabi are organized by school terms (three each year) and by year (three years). Content is structured by modules, by units within modules, and by topics. Stated learning objectives are both "general" or "specific."

The syllabi treats issues and concerns reflected in the *Report of the National Commission on Education, 1993*, which focused public attention on population/family life education, environmental issues, HIV/AIDS awareness, the world of work, and gender sensitivity. CDD distinguishes between the infusion and the integration of special topics: "infusion includes the knowledge and skills required to be a natural part of the subject content, while integration

requires the teaching of a given concept as a separate topic within a subject."

CDD's scheduled workplan includes completion of remaining subject syllabi in the three-year JC program as well as the writing or procurement of textbooks, teachers' guides and student materials. The Division of Guidance and Counseling has also developed a draft program outline for the primary, junior secondary and senior secondary schools which incorporates content and activities throughout related to the national issues noted above.

Curriculum Processes and Structures

Systems development and quality control characterize CDD's curriculum development method. Its approach is established through a number of specification documents and oversight/advisory groups. Important documents include the *Curriculum Development Procedures Manual* which presents steps in developing a syllabus, a curriculum blueprint, and curriculum materials; steps for implementing the curriculum; and steps in evaluating and revising the curriculum. A supplement, *Guidelines for Developing Syllabus Content, Format, and Other Aspects Related to the Syllabus*, provides specific direction for syllabus format and content. Another important document, *The Curriculum Blueprint: Ten Year Basic Education Programme*, concisely interprets the philosophy, components, strategies, objectives, and aims of basic education in Botswana.

Several task forces/committees, most established in BEC's time, play vital roles in curriculum development, implementation, and evaluation. The scope of work for *The Interdepartmental Task Force on the Introduction of the Three Year Junior Certificate* "encompasses a broad set of planning, curricular, training, and learning issues that will affect every component of the three year JC curriculum." Each subject area actively engaged in curriculum development, as a matter of CDD policy, must form a *Subject Task Force* that is advisory to CDD. Terms of reference for the *Basic Education Implementation Committee* specify that it is to: (1) serve as a project implementation advisory body, (2) provide a forum for identifying, selecting and recommending strategies for consolidation of basic education, (3) review and evaluate the design, implementation, communication and coordination of basic education, (4) facilitate joint planning among relevant stakeholders, and (5) provide a forum for information sharing, and (6) disseminate information.

BEC fully supported CDD's development of the new JC curriculum syllabi. Content of the new syllabi addresses issues of curricular relevance as Botswana increasingly transforms from a rural agriculturally based economy to a more urbanized, industrialized society. Many changes appear in the new three-year syllabi that are not present in the two-year syllabi. These include special topics, depth of scope and sequence, clarity of objectives. Attention in the new syllabi is given to the interrelated skills across subjects and across forms (grade levels); this is a significant step in the process of "consolidating basic education", a step which curriculum planners indicate is being carried over to the integration and articulation of the primary and junior secondary curricula.

Research and Evaluation

Research and evaluation activities during the BEC project period included needs assessment, studies by CDD officers based on school visits, and BEC-funded consultancies on selected curriculum development issues. The needs assessment, carried out as the first step in implementing the USAID/GOB Basic Education Consolidation project, involved over 200 educators and citizens. The exercise covered the period from December 1992 through July 1993. It culminated in a 100-page document which identified priority needs for the consolidation of basic education in Botswana and work plans for the BEC team.

Six consultancies were initiated by CDD and one by Guidance and Counseling. Terms of reference for each were established by appropriate task forces and committees who then met with and guided the work of the consultants. Most reports are still in draft form. As can be seen in the list, reports are recently completed, so much so that review by CDD and special task groups now is only preliminary. The reports are: *English Language Consultant Report*. (Janet Ramsay Orr, June 1995); *Towards a Curriculum Policy for Basic Education in Botswana*.

(Cream Wright, April 1995); *Subject Combinations and Time-Tabling for Basic Education in Botswana*. (Cream Wright, July 1995); *Policy Guidelines on the Implementation of Guidance and Counseling in Botswana's Education System*. (Wayne Maes, May 1995). *Towards a Computer Awareness Policy for Basic Education in Botswana* (Peter Dublin, June 1995); *The Environmental Resources Handbook* (Lois Berger: Editor).

Five CDD officers were members of the Criterion-Referenced Test Implementation Committee (CRTIC). Details of the committee's work in developing CRT-based tests and continuous assessment methods are discussed in more detail in the student assessment section. Perhaps the most important aspect of CRTIC was that CDD, TT&D, and ERTD staff joined forces to explore criterion-referenced testing and assessment with teachers in classrooms.

The development of a student assessment and evaluation program that is CRT-based was one the main elements of BEC. The project design correctly asserts that examination results and classroom assessments have value not only to students, teachers and parents, but also to teacher trainers and curriculum developers. That is still true. Just as the assessment system cannot implement CRT-driven testing without a curriculum, the needs of curriculum developers and teacher trainers for assessment results cannot be fully met until the criterion-referenced assessment technology is in place.

Training

Three types of BEC-funded training occurred during the project: long-term, short-term, and in-house on-the-job training. CDD had two long-term participants who received Master's degrees (one was also earned in Guidance and Counseling) and four short-term participants who spent a total of eleven months in study and observation tours abroad. Both BEC advisors attached to CDD did extensive on-the-job training in their respective areas of instructional materials development (largely computer publication applications) and curriculum development. In addition to BEC-funded training, the MOE, in keeping with its development policies, provided two bursaries during the project period to CDD officers.

In-house training by the BEC advisors took on added significance when 20 seconded teachers who were inexperienced curriculum writers were thrust into curriculum development roles. Shortly after their arrival, a three-day orientation seminar was conducted by CD&E, with participation by the BEC curriculum advisor, for seconded officers to provide them with an introduction to the curriculum development process.

Teacher Training

EC goals were to (1) improve the quality of the established teacher training system to prepare new and current teachers in using the new basic education curriculum, and (2) improve the quality of curriculum and instruction offered nationwide to primary and junior secondary students. The evaluation team's scope of work listed two tasks related to each of the two BEC goals: to determine (1) the extent and type of preservice and inservice teacher training curriculum revisions that occurred as a result of the changes in the basic education curriculum, and (2) the extent of implementation of the curriculum through preservice and inservice teacher training. These teacher training goals fall within the responsibility of the Department of Teacher Training and Development (TT&D) established in 1989. TT&D is divided into a Preservice Unit and an Inservice Unit. BEC assigned two advisors to TT&D. The Preservice Advisor was Dr Johnson Odharo; the Inservice Advisor was Dr Donna Kay LeCzel.

Preservice Teacher Training

The Preservice Unit has training responsibilities for the three Primary Teacher Training Colleges (PTTCs) and the three Colleges of Education (COEs). The two CEOs in Molepolole and Tonota CEOs train junior secondary teachers, the COE in Tlokweng is changing from a two-year certificate granting college to a three-year diploma granting college. Within two years, the three remaining PTTCs will grant diplomas.

The needs assessment exercise led to twelve preservice objectives. Each of the TT&D/BEC task objectives discussed below is followed by a brief discussion of findings. Assessments are summarized in the next chapter. As with all BEC advisors, the preservice advisor provided support for TT&D initiatives. In this way, BEC objectives become TT&D/BEC objectives wherever the TT&D workscope coincides with the advisor's objectives that emerged from the needs assessment.

Assist in Conducting COE Self Study. Self-study, used by institutions periodically to assess their performance, has been conducted for some time in Botswana by PTTCs and was modified with BEC assistance for the junior secondary Colleges of Education. Procedures followed those used by PTTCs.

Study Teacher Demand and Supply. The Preservice Advisor assisted in two Teacher Demand and Supply studies, one with the Department of Primary Education at a time when it appeared that the PTTCs would certify more teachers than openings; the other as part of planning for NDP VIII. PTTC output of certified teachers reduced the number of untrained teachers by half since 1985, virtually eliminated the number of expatriate teachers, staffed the expanding number

of schools and classrooms, has decreased pupil-teacher ratios.

Increase Coordination, Consultation, and Communication Among MOE Units. The three Cs signify the consolidation that is intended to grow among MOE administrative units. These are CDD, TT&D, and ERTD in the BEC context. Three things suggest that TT&D/BEC is working toward consolidation. These are the presence of the preservice advisor on national curriculum revision panels, participation of the inservice advisor on the planning committee for the 2nd National Conference on Teacher Education, and the involvement of MOE personnel in school heads training programs or conferences.

The 2nd National Conference on Teacher Education. A national conference was held in May 1995 at the Molepolole College of Education that brought together nearly 500 teacher educators in Botswana; 43 papers were presented. Participants considered future directions in teacher training following the 1994 publication of *Government Paper No. 2 : Revised National Policy on Education*. The preservice and Inservice advisors both participated in the planning and operation of the conference.

Produce and Distribute the Management Manual to the TTCs. A *Management Manual* for the teacher training colleges was written, produced, and distributed during BEC's tenure. This comprehensive manual contains 17 sections co-authored by 14 lecturers and principals representing all six TTCs.

Revise the 3-Year Junior Certificate Curriculum for Colleges of Education and Assure That Primary/Secondary School Teachers Are Trained in the Revised Basic Education Curriculum. CDD's revision of the junior secondary curriculum involved a number of individuals including the BEC preservice advisor when revisions directly related to teacher training. His activities included development of *Guidelines for Syllabus Development* prepared by CDD, focus group analysis of the 2nd National Commission on Education Report, and development of the *Curriculum Blueprint*.

Conduct Computer Awareness Training Workshops For TTC Lecturers. Department heads in the PTTCs and COEs attended a computer awareness workshop at the Molepolole COE in April 1995. This was followed by a second workshop for COE lecturers who will be teaching a three-year Communication and Study Skills course that includes computer-related units. This course offered by both Colleges of Education has been revised so that it is now a three-year offering and includes several units and activities each year related to computer use. .

Establish an Evaluation and Management System in TT & D Preservice and Inservice Units. TT&Ds "evaluation and management system" is a well planned procedural system automated as much as possible and compatible with MOE policies and procedures. Several elements are completed and others are being developed, such as the management manual, the teacher supply and demand study, personnel databases, teacher candidate and test results databases, personnel evaluation procedures and forms.

Assist In CRT and Continuous Assessment Training Courses For TTC Lecturers. CRTIC's work in developing a teacher training program for CRT-based assessment is described in the section of the report on Student Assessment. CRTIC is a working committee that brings together CDD, TT&D, and ERTD staff. A version of CRTIC's training program will be provided for teacher training college lecturers in January 1996 so that they might use CRT assessment as they teach preparation courses for students.

Revise Teacher Training Curricula To Include CRT And CA Materials. Course syllabi for the testing, measurement, and evaluation courses offered in the preservice teacher training program at Molepolole and Tonota now contain units on criterion-referenced testing and continuous assessment prepared by the BEC assessment advisor. At Tlokweng, all current second and third year students have attended workshops in CRT/CA, and first year students will attend

workshops this autumn. However, lecturers have been slow to model CRT/CA assessment in their own classes.

Conduct Formative Evaluations of the Primary Pilot Diploma Program and Recommend Necessary Changes for Adoption of a 3-Year Diploma Program in the TTCs. A task force was organized to monitor and advise the Tlokweng and TT&D staff as the pilot Diploma Program's development progressed. The task force included staff from the Department of Primary Education, each teacher training college, and the University of Botswana. The BEC preservice advisor worked closely with the task force. The diploma program is slated for introduction at the Lobatse Primary Teacher Training College with the new class of students this coming year. The diploma program will then be introduced at Serowe COE and Francistown COE and the certificate program will be completely phased out.

Preservice long and short term participant training. Twelve long-term trainees were enrolled in Master's Degree programs. A short-term training program was completed by six preservice teacher training TT&D staff, including the department CEO and the Acting PEO/Preservice. The program focused on the management of teacher training institutions and their improvement, was conducted in Singapore in early 1995, and was planned and facilitated by the preservice advisor.

Provide commodity and material support and training in its use for TT&D. Computer hardware and software was provided to TT&D. Rather than sorting out the equipment supplied to Inservice Centers, all will be noted here. The information and figures are shown below.

Location and Computer Equipment (Pula)

Headquarters (12 workstations, network system, photocopier)	50400
Inservice Centers (12 work stations, 4 photocopier)	127000
Teacher Training Institutions (12 work stations, 4 VCR/TV)	71500

BEC Consultancy Reports/Work Reviewed. The consultancies of persons listed below had direct impact on teacher training. All of those related to teacher training -- Little, Pursley, Urch, Munger, Madyun, Dunlap, Marope, the Apple Center, and Peterson -- occurred in 1995. While most of them provided assistance to different areas of teacher training -- Diploma, library, computers, inservice, network design, and teacher effectiveness. Recommendations of Urch, Munger, and Madyun are already surfacing in documents and activities. Little, Pursley, and Peterson consultancies were more service orientated so their input was directly delivered to conference planners and participants.

Dr. Fredi Munger, University of Massachusetts, Diploma in Primary Education
Drs. Judith Warren Little, University of California, Berkeley, and

Linda Pursley, Cornell University, Inservice Education
Dr. P.T.M. Marope, University of Botswana, Primary School Teacher Effectiveness Study
Apple Center, Gaborone, Database Design
Dr. George Urch, University of Massachusetts, DPE Evaluation
Dr. Madyun, Education Center Libraries

Preservice Advisor's Participation on Selected Panels and Committees. The participation of the

preservice advisor on several MOE and TT&D committees is shown below.
National Council on Teacher Education

Curriculum Coordinating Committee, NCTE
Board of Affiliated Institutions
Board of Affiliated Colleges of Education
3 Year JC Task Force for Colleges of Education
Diploma in Primary Education Task Force
Computer Advisory Committee
National Conference on Teacher Education Planning Committee
Basic Education Implementation Committee
Physical Education National Panel
Principals' Committee
MCOE Self-Study Team
Tonota COE Self-Study Team

Inservice Teacher Training

The Inservice Unit is responsible for teacher training and staff development in primary, junior secondary, and senior secondary schools. Ten years ago, inservice teacher training was carried out through several Ministry departments as needs arose. There are now twelve centers. With this rapid growth, inservice personnel need training, the inservice system needs consistent policy and procedures, and the program and the schools it serves need an agreed upon understanding of expected services.

The needs assessment exercise led to seven inservice objectives. These relate to Inservice Unit areas of teacher training. Objectives were changed when BEC's early close-out was made official. Findings for TT&D/BEC task objectives are discussed below and each is followed by a very brief discussion of related activities.

Assist in the Delivery of Inservice Activities Across the Nine (Now Ten) Years of Basic Education. During 1994, the Inservice Unit conducted 438 different inservice functions through eleven different Education Centers; 167 were primary education activities and 55 were secondary education activities; 81 were classified as other. These activities were attended by 15908 participants.

Assist in the Delivery of Inservice Activities Across the Nine (Now Ten) Years of Basic Education Including: (1) Review the Structure of Inservice Delivery Systems. The Inservice advisor visited each Education Center at least twice during her tenure at TT & D, using interview protocols, informal observation techniques, and participatory activities to review the structure and delivery systems at those centers. No report was written.

Assist in the Delivery of Inservice Activities Across the Nine (Now Ten) Years of Basic Education Including: (2) assist in the coordination of inservice training activities. Inservice teacher education has been the responsibility of TT&D's Inservice Unit since 1989. However, inservice activities are continue to be delivered by a variety of departments and individuals, in some cases with little or no TT&D involvement. TT&D is making a concerted effort to coordinate all inservice activities.

Assist in the Delivery of Inservice Activities Across the Nine (Now Ten) Years of Basic Education Including: (3) Provide Training in CRT/Continuous Assessment. CRTIC's work in developing a teacher training program for CRT-based assessment is described in the student assessment section of this report. The Education Officer in TT & D responsible for working with ERTD in this area is preparing to direct the training of 700 teachers, called Resource Persons (one for each primary school in the country), who will be responsible for disseminating

CRT assessment information to teachers in their schools. Assistance was provided through the BEC assessment advisor.

Assist in the Delivery of Inservice Activities Across the Nine (Now Ten) Years of Basic Education Including: (4) Assist With the Commonwealth Secretariat Training. From May through July 1994, 817 of the 850 primary and secondary school heads participated in a three-day training program in school management. The inservice advisor served as a member of the steering committee, provided advice, helped design and conduct the training of trainers activities, and participated in the planning process.

Assist in the Delivery of Inservice Activities Across the Nine (Now Ten) Years of Basic Education Including: (5) Develop an Annual Inservice Calendar Planning Process. As the number and complexity of inservice activities grows, so do demands on school personnel time. Difficulties in scheduling trainers and problems with limited venues require scheduling well ahead of training dates. As BEC ends, the unit in response to RNPE directions, was moving away from national planning and emphasizing, instead, calendar building at a center or regional level.

Strengthen Training Capabilities of Inservice officers by: Training Inservice Officers. A national conference that brought together virtually all inservice providers in the country was held in early 1995. A national planning committee directed by the Inservice Unit PEO was assisted by the BEC inservice advisor and two BEC consultants. The conference was successful, in part due to progress taking place toward national system development, the building of an infrastructure for inservice delivery, and the growing capacities of individuals and groups.

Strengthen Training Capabilities of Inservice officers by: Assisting Breakthrough Teacher Advisors. Several training sessions on various topics were conducted by the inservice advisor for the Breakthrough/Project teacher advisors. This included training in clinical supervision and language acquisition, as well as informal activities involving problem solving, planning, and manual/materials production.

Strengthen Infrastructural Base for Inservice Activities by: (1) Developing an Inservice Manual. Discussions about an Inservice Manual began with the start of the BEC project and have continued throughout the project. Conceptions of the manual varied widely in ways that included (1) a revision of the 1991 Education Center Guidelines, (2) a procedural kit, (3) a four part topical collection, (4) work by a British consultant, (5) work of the BEC inservice advisor, and (6) a manual written by education officers in the field. A committee of three education officers now has a draft of a manual ready for review by TT&D and, conditional on approval, editing and publication.

Strengthen Infrastructural Base for Inservice Activities by: (2) Enhancing Resources at Education Centre Libraries. A four month training/technical assistance consultancy was provided from April-July 1995. This served as a catalyst to spur greater cooperation among the Education Centers, the Botswana National Library Service, and the University of Botswana. One week's training was provided at each of the 11 Centers in operation at that time. Training included basic library maintenance skills, collection enhancement, and development of skills and abilities to meet site-specific problems.

Strengthen Infrastructural Base for Inservice Activities by: (3) Establishing a Monitoring and Evaluation System. A system for monitoring and evaluating inservice programs exists, but several elements have been developed and are in use. The inservice advisor met with a team of Education Center directors to develop a common report writing format which is now in use. Similarly, the inservice unit developed procedures for the evaluation of each training workshop or seminar. BEC has provided computer hardware for each center and the headquarters office, has supported a network specification consultancy whose report is completed, and has trained education officers to participate in its development and use.

Strengthen Infrastructural Base for Inservice Activities by: (4) Increasing Collaboration Among and Between MOE Units. The participation of the inservice advisor on the planning committee for the 2nd National Conference on Teacher Education and involvement in school heads training, and participation on group planning activities all provide evidence that progress was made toward this goal.

Establish Information Base for Inservice Activities with (1) Breakthrough Project Method. The inservice advisor worked with the Breakthrough/Project Unit to collect data on training effectiveness and the use of the methods following training. Between September 1993 and August 1994, she visited seven Education Centers and 17 schools where she observed activities in 40 classrooms, conducted 48 interviews, and observed or participated in training for 382 teachers and officers. No formal report was written, but feedback given to Breakthrough staff and the teacher advisors was said to be well received.

Establish Information Base for Inservice Activities with (2) Developing a Data Base among Inservice Providers. This is one of the areas that appears to be more affected by the early termination of the project. Equipment is just arriving that will enable consistent and widespread use across a network linking the six teacher training institutions, the six regional inservice centers, Education Centers and inservice delivery sites, and the Department of Teacher Training and Development.

Develop and Implement a Policy for Incentives for Inservice Program and Activities. From May through June 1995, six educators, including the PEO/Inservice, participated in a short-term training program sponsored by the BEC project. The study tour of several United Kingdom institutions had as its main focus the use of distance learning options and the provision of credit bearing incentives for inservice program and activities. While little came of it during the project, it now appears that arrangements, started as a result of the study tours, provides an opportunity to pilot a new training effort that awards university credit for completing a series of training modules.

Inservice long and short term participant training. The Inservice advisor provided informal assistance to Ms. Rebecca Mphahudi, the short/long term training officer as she managed the selection of MOE staff for participant training. Although not part of the BEC Participant Training Committee, the inservice advisor played a direct role in identifying and selecting participants supported by BEC funds. She was directly involved in planning a short-term training visit to the United Kingdom (including accompanying the group). This visit was related to distance learning and to credit-earning incentives as part of the inservice program. In long-term training, four staff enrolled in Masters Degree programs and six participated in short-term study tours.

Inservice Advisor's Participation on Selected Panels and Committees. The participation of the inservice advisor on several MOE and TT&D committees is shown below.

National Conference on Teacher Education Planning Committee
Basic Education Implementation Committee
Inservice Providers Seminar Planning Committee
Head Teacher Training Committee
Untrained Teacher Upgrade Committee
Breakthrough to Setswana Training
Project Method Training
Education Center Directors
UB-INSET Advisory Board
National Project Implementation Committee

Student Assessment

USAID's scope of work for evaluating BEC's student assessment component lists two goals with an evaluation task for each. Goals are (1) to establish and monitor student performance using criterion referenced testing (CRT) and school-based continuous assessment (CA), and (2) to establish an assessment system that provides feedback on student achievement to pupils, teachers, parents, policy makers, and the public service. Dr Kofi Quansah is the BEC advisor.

CRT-based certification testing and assessment relate to the purposes and the interpretations of assessment results. This simple fact has been made more confusing than necessary. To clarify:

CRT is a process to develop assessment methods so that obtained measures can be interpreted in terms of the attainment of specified learning targets (objectives, performance tasks, competencies).

Continuous assessment refers to frequent and periodic use by teachers of various assessment methods, ranging from classroom questioning and snap quizzes to portfolios and formal tests, in order to measure and evaluate student progress on objectives-related performances.

The two BEC goals state that a CRT-based student assessment system is to be developed for certification testing and continuous assessment, and that certification test scores and continuous assessment measures are to provide meaningful information to a variety of stakeholders. These goals are being addressed by staff in the Examinations, Research and Testing Division (ERTD) which was established this year by joining the former Research and Testing Centre and the former Examinations Unit which were part of CD&E. ERTD staff are psychometrically sophisticated; they know how to establish procedures that lead to a CRT basis for interpreting test scores and continuous assessment measures.

The shift from a norm-referenced to a criterion-referenced certification testing and reporting system had been decided by MOE long before BEC's start-up and was partly due to earlier JSEIP-supported activities. Mrs Serara Moahi, now the acting head of ERTD, was closely involved in this effort as were other staff in CDD and the then Research and Testing Centre (RTC). Dr Anthony Nitko conducted two short-term consultancies under the JSEIP project.

Perhaps more than anyone else, he lit the CRT fuse in Botswana.

Two ERTD programmatic efforts are involved in CRT implementation. Procedures have to be institutionalized to develop CRT-based certification tests, which requires close coordination between CDD and ERTD. To strengthen the continuous assessment practices of teachers, a large-scale training program is needed, and this requires close coordination between ERTD and TT&D.

Development of a CRT-Based Teacher Training Program

Development and implementation of a CRT plan for training primary school teachers started with the formation in 1992, before BEC arrived, of what proved to be an outstanding working group called the Criterion Referenced Testing Implementation Committee (CRTIC). Its membership at last count showed nine ERTD officers, five CDD officers, three TT&D officers, one officer from Primary Education, and one from EPD. CRTIC developed a CRT training and implementation pilot project involving 41 primary schools. In this project, CRTIC created end-of-term CRT Standard 5 tests and trained Standard 5 teachers in CRT-based continuous assessment methods, monitored teacher and student classroom activities, and collected end-of-term test scores and information about use of the CRT approach in teaching and assessment from teachers. Because of lingering confusion about the purpose of the CRTIC's pilot school project, it is worth stating that the project was never meant to be a CRT impact study or to analyze learning gains. The main purposes of data collection in the 41 pilot schools were to obtain feedback on the progress of CRT implementation, to identify problems in implementing CRT procedures, to provide help to teachers, and to develop a CRT-based training program.

By late 1994, CRTIC members had enough front line CRT experience to launch an ambitious training scheme, the objective being the training of all primary teachers in CRT-driven continuous assessment methods. There were two phases to this training plan. CRTIC first trained 80 Regional Trainers who in turn trained all Standard 5 teachers and most of the primary headteachers. The second phase, about to get underway, involved first the training of 80 TT&D trainers in the CRT approach. That has been done. TT&D staff are now to begin training approximately 700 school-based "Resource Persons" (one to a primary school) whose job it will be to assist teachers in each school in using and applying the CRT approach in continuous assessment. No one believes that this one-shot training will change the continuous assessment practices of all teachers, but it is a start in awareness and at least the TT&D trainers are beginning themselves to learn CRT-based ideas. There is surely a need now to develop criteria so that the effects of training can be evaluated.

As well as assisting in the development of the CRTIC's regional training of all Standard 5 teachers and developing the framework of the National Training Program for CRT-based assessment, Dr Quansah assisted CRTIC to produce an important document, the *Teachers Handbook on Criterion-Referenced Testing and Continuous Assessment*. It contains three modules with three units each, which are covered in one week in the National Training Program. Details of the training program are written up in *Changing Classroom Assessment and the National Examination System to Criterion-Referenced Testing* (July 1995).

In-house seminar sessions of one and one-half hours per week started in November 1993 and continued through February 1994. These could not be sustained within the heavy work schedule of ERTD. ERTD must develop, administer, score, and report results for the annual Standard 4 Attainment Tests, the PSLE, and the JCE. In view of this, in-house training has been conducted less frequently through seminars and workshops, the dates for which are periodically determined by ERTD.

Development of a CRT-Based Certification Testing Program.

ERTD prepared plans for test blueprinting, writing items, validating and classifying items, item tryout testing, developing test plans, item editing, test assembly, establishing grade criteria, and standard setting. Draft PSLE blueprints were prepared for all five PSLE subject tests in workshops attended jointly by ERTD and CDD officers in December 1994 and March 1995. Uniform blueprint dimension titles (names of the curriculum content and thinking process categories) were provisionally developed then. Final ERTD development of test blueprints, including the identification of dimension category names, was done by ERTD staff in August 1995 and the blueprints handed over to CDD.

The development of test plans describing characteristics of the trial CRT-based 1996 PSLE and its administration and scoring was partly finished by ERTD and CDD in March 1995. All five subjects will have a 60-item multiple choice test; and Setswana and English will administer an essay examination. Essays are written in August; multiple-choice tests are given in October. About 40,000 examinees will sit the PSLE.

Ebel or Angoff procedures will be used for standard setting to determine cutscores between marks of A and B, B and C, and C and D. Standard setting is important since it establishes the meaning of marks in terms of the quality of examinees' performance. Standard setting establishes score-to-mark conversions for student certificates and school rosters of student achievement. ERTD staff participated in these exercises back in JSEIP times. Standard setting for the 1996 trial PSLE obviously needs to be done before 1996 PSLE test papers are scanned and computer processed, since a scoring program must be operating. ERTD may elect to wait for final standard setting and determination of 1996 cutscores until the PSLE is camera-ready for printing.

Preliminary review of the items written at the May 1995 workshop has been completed by ERTD officers. A validation exercise involving experienced teachers and teacher trainers will be conducted by ERTD in mid-1996. An item banking consultant was contracted.

Mrs Moahi, the Acting PEO who heads ERTD, carefully reviewed the consultant's report and decided to postpone hardware selection until further detailed specification is completed for ERTD's total computer test processing operation, including mark reading, scoring, processing, reporting, item analysis, and item banking. Mrs Moahi requested the services of a short-term computer test systems expert, Dr Richard Johnson, to develop ERTD's programming specifications. His consultancy was approved by the steering committee and he will be arriving in Botswana on 7 September 1995 for ten days. In the longer run, follow-on consultancy under MOE contract should include processing the 1966 PSLE test papers and training Botswana staff.

ERTD/BEC Reports and Papers

Dr Quansah prepared a number of papers that served a variety of purposes. Eight papers were prepared for in-house seminars and workshops for ERTD and CRTIC, Three were written for Training Workshops. Two presented revised course outlines for Teacher Training Institutes. Seven had to do with aspects of the national examinations system. Five were presentations to MOE and related bodies. Details are reported in Chapter 4.

BEC-Funded Consultants

There have been three short-term consultants with the assessment component so far. A fourth is scheduled to arrive on 7 September.

Mr Eric Eno. Terms of reference for Eric Eno's consultancy, carried out 10-22 July 1995, were to develop objective criteria for the evaluation of item banking, item analysis, and test scoring software; to evaluate available software and design a computer configuration for implementing this. His planned second consultancy was deferred, replaced by Mrs Moahi's request to BEC to obtain the short-term services of Dr Richard Johnson.

Dr Richard Johnson. Dr Johnson will work primarily with ERTD staff but also consult with professional staff of the Government Computer Bureau (GCB) to develop specifications for a single generalized and integrated scoring and reporting system customized for ERTD.

Dr Anthony Nitko June 1993. Early in the project, Dr Anthony Nitko carried out two short-term consultancies. His first BEC consultancy in June 1993 was an evaluation of CRTIC's criterion-referenced testing implementation plan.

Dr Anthony Nitko: October 1993. Dr Nitko's second consultancy in October 1993 anticipated human and fiscal resource needs as the shift to CRT and continuous assessment takes place. He prepared several recommendations. These are expected to prove valuable when ERTD turns its attention to constructing CRT-based Junior Certificate Examinations.

MOE Staff Development

In-House Training. Dr Quansah provided timely and on-going assistance to CRTIC and ERTD staff through helping them organize in-house seminars. CRTIC developed the *Teachers Handbook on Criterion-Referenced Testing and Continuous Assessment*.

Participant Training. The list of ERTD staff who have studied under the BEC long-term participant training program is as follows:

Ms Kathleen Letshabo at the University of Pittsburgh began study in August 1993. Kathleen had to complete her bachelor's degree before entering the masters program in 1995. With BEC closure, the Ministry of Education will be responsible for her completion of the masters degree in Educational Measurement.

Mrs Theresa Mmualefe started her masters degree course at the University of Pittsburgh in August 1993 and successfully completed the Educational Measurement program in May 1995. She has since returned to her position on the staff of ERTD.

Mr Augustines Utlwang is in study at the University of Pittsburgh, starting masters degree program in Educational Measurement in January 1994. He is due back to his post in ERTD at the end of 1995.

Ms Chenzimu Gasemotho started a six-month course in Educational Measurement at Florida State University in June 1994. This was completed in December 1994, and she has since returned to her post in ERTD.

Study Visits for ERTD Staff. Study visits to the Kenya National Examinations Council (KNEC), Nairobi, and the West African Examinations Council (WAEC), Accra, were sponsored by BEC in 1994. The visiting team to KNEC (September 12-16, 1994) was comprised of Mrs Limakatso Charakupa and Mrs Janet Gaobakwe. The visiting team to WAEC (September 23-30, 1994) was comprised of Mrs Serara Moahi and Mr Joe Tshimako.

Project-Related Outputs.

Most technical and administrative staff in ERTD are familiar users of Macintosh computers, with word processing programs like Word 5.1 and Pagemaker, and with graphics programs. ERTD is looking forward to receipt of equipment supplied by BEC, since it facilitates efficient production. It will receive eleven Macintosh desktop computers, two IBM-type desktop computers, and four Macintosh Powerbooks. Added to this will be three photocopiers, three overhead projectors, one binder, and three shredders. The total value of these commodities is 223 000.

All of ERTD's Research and Testing Officers are members of Subject Task Forces which determine the structure of the curriculum for each subject and the nature of how learning effects are to assessed. These task forces will become even more important when further development of a continuous assessment model proceeds.

CHAPTER 6. ASSESSMENTS

Curriculum Development

Curriculum and Materials Development. The delivery of revised three year junior secondary syllabi for six core subject and one optional subject in time for the start-up of the 1996 school year represents a major accomplishment which all of those associated with that challenge should take pride. The syllabi are striking examples of curriculum products that signify the process of "consolidating basic education."

The content of the JC curriculum as expressed in the syllabi addresses the issue of curricular relevance to emerging national and individual needs. Substantial changes appear in the three-year JC syllabi which address criteria of relevance, depth, and scope and sequence.

Processes and Structures for Curriculum Development. Overall, the systems for curriculum development which have been evolving since the founding of the CDD nearly two decades ago are being firmly established. Sound processes for curriculum development (greater quality control and oversight) are known, practiced, evaluated and improved. Concrete steps have been taken to address the issue of consultation in the curriculum development and implementation process through a high-level interdepartmental body that provides direction and advice; and to the use of broadly based subject task forces that participate in designing, developing and evaluating curricula. The recently adopted *Curriculum Blueprint* makes a significant contribution to the system for curriculum development and dissemination in two ways: (a) by articulating the new philosophy of education, clarifying and defining critical basic education concepts and setting forth a strategy for implementation of the new basic education program and, (b) by serving as an instrument of communication about basic education throughout the educational system.

Research and Evaluation. A plan for the formative and summative evaluation of the curriculum is not as yet in place. This needs attention. Close coordination with ERTD is needed to insure that CDD's information priorities are accommodated in developing CRT-based assessments. While detailed analysis by CDD staff of the six consultant reports mentioned in the last chapter will not occur during BEC, it is apparent that these reports present a great deal of information which will enlighten and inform curriculum decisions made by CDD.

Training. Relevant, appropriate training for curriculum development and evaluation officers is perhaps the most urgent need of CDD. BEC made a contribution to the training of curriculum development officers; this may be the area hurt most by the project's early close-out. Given the level of need in the Division, more staff should have received long-and short-term training

through BEC. Nevertheless, the quality of production in CDD is remarkable.

The extent of in-house training by the curriculum advisor and the instructional materials advisor was also sharply limited by the early close-out of the project. Given the workloads and tight deadlines during the latter months of BEC, the training of CDD personnel has been highly effective. The near unanimous requests of curriculum development officers for more training reflect desirable, professional attitudes toward their work. The level of skill of the curriculum development officer responsible for materials production assures that on-the-job training in the use of the BEC-provided desk-top publishing can be sustained after the project ends.

Preservice Teacher Training

Preservice activities related to the two major goals will continue when BEC leaves, and preservice education in 1995 is clearly in an improved state when compared with 1992. The substantial findings presented in the last chapter support that assertion. Findings related to twelve preservice needs assessment objectives shows that seven are either achieved or currently in-process. These are to:

- Bridge the gap between Primary and Junior Secondary teacher training programs
- Introduce specialization in the PTTCs to ability differences at the primary level
- Strengthen teacher preparation for innovations in primary Basic Education
- Strengthen the administrative capabilities of the training colleges
- Develop the research capabilities of the colleges
- Enrich the training programs of the colleges through short/long-term training/study
- Design a system to monitor and evaluate the colleges including data tracking/retrieval

At a policy level, all primary and junior secondary programs are now diploma programs, although it will take a few years to have all graduates with diplomas. Tlokweng TTC already has introduced specialization; Lobatse TTC will in the coming year. College lecturers received training in all of the recent innovations. Teacher training curricula have been revised to incorporate needed concepts and skills. Presentations of college lecturers at a February 1995 research conference, at the 2nd National Conference on Teacher Education and at the 1995 Botswana Conference testify to increased research capabilities. Several lecturers profiting from short- and long-term training as well as in-country short courses is well documented.

Five of the preservice needs assessment objectives were not realized. These were to:

- Improve instructional quality at the primary level by reducing subject-teacher ratios
- Integrate primary/junior secondary training curriculum to achieve uniform quality
- Close the gap between conditions of service for primary and junior secondary teachers
- Localize the professional staff in the Colleges of Education
- Strengthen the instructional resource capability of the colleges.

Specialization may help subject-teacher ratios, but teachers are still being trained in 12 curricular areas. It is the announced intention of the Department of Teacher Training and Development that primary and junior secondary teacher training will take place "under one roof" but the planning process has not started as yet. Of the five objectives listed only localization appears in project documents as an intended outcome. Improvements are occurring, but

Botswana lecturers still comprise only half of the CoE lecturers.

Preservice teacher training in 1995 is characterized by the following products, processes, and capabilities which it did not have in 1992.

- A self-study process usable at primary/junior secondary teacher training institutions
- A *Management Manual* for the Teacher Training Colleges
- A teacher training curriculum tied to revisions/innovations in the school program
- A Diploma in Primary Education program at one institution, slated for the rest
- An extremely computer literate headquarters and COE staff.
- The beginnings (equipment, prototypes, manuals, and initial training) of an Evaluation and Management network among the teacher training institutions and the Department of Teacher Training and Development.

Preservice areas still needing attention

- The management, monitoring and evaluation system for the entire TT&D system
- Installation and training for the increased computer capabilities at each TTC and COE
- The modeling of CA and CRT in the courses and program of the college lecturers.
- Localization of lecturers at the teacher training institutions.
- Integration of primary and junior secondary teacher training.

Inservice Teacher Training

A look at findings related to the inservice needs assessment objectives shows that four of the seven are either achieved or currently in-process. These are to:

- Unite inservice teams so that they are not fragmented.
- Strengthen the quality of inservice offered to primary and secondary schools.
- Establish inservice training policy.
- Increase the effectiveness of the Education Centers.

Inservice providers, previously housed in a number of settings and Ministry departments are now not only under TT&D but will soon be jointly housed, both primary and secondary, in the Education Centers. The number and complexity of inservice activities over the last year documents the strengthening of inservice quality. Education Centers are improved through more responsive service, better trained personnel, better instructional resources, and extensive plans for increased service.

Some of those needs assessment findings were not measurable, were not pursued, or were not realized. These objectives were to:

- State and clarify the philosophy of basic education and its curriculum implications so that everyone involved should contribute and be committed to program success.
- Establish a program of staff development in every school.
- Enhance job satisfaction, motivation, positive attitude, efficiency, and increased productivity amongst teachers through recognized continuing education program.

Staff development is a goal pursued by the unit, which has prepared some groundwork. TT&D is pursuing staff development, has prepared some of the groundwork, and has plans for implementation. While the first and third objectives are praiseworthy, were discussed in retreats and seminars, and are important for inservice, neither were directly pursued through work plans nor are really assessable as an objective.

Significant positive outcomes are shown by:

- The number, nature and extent of current inservice offerings.
- The success achieved in moving toward combined inservice regions and Education Centers
- The level of consultation and collaboration with other Ministry departments
- The efforts to upgrade the activities of inservice providers
- The development of an overall inservice training policy for the country.

- Plans to move toward school-based staff development as part of an overall country plan.
- The increased percentage of Batswana educators serving as secondary inservice officers.

Inservice areas still needing attention

- Incentives for involvement in inservice training are needed.
- Inservice programs using a cascade model must also provide training for training
- The Inservice Unit is understaffed for all the inservice needs that it is attempting to fill.
- The efforts toward school-based staff development need to be vigorously pursued.
- Planning for CRT/CA training, already started to some degree, must be intensified.
- Inservice is needed within TT & D's own agencies and personnel - that is, TT & D,

TTCs and COEs personnel need a staff development program and plan.

Student Assessment

ERTD and CRTIC initiatives made significant progress on two broad programmatic fronts. These were (1) development of a CRT-based teacher training program and (2) development of a CRT-based certification testing program. All Standard 5 teachers and nearly all primary school headteachers have had the first phase of CRT training. The "multiplier effect" training plan, applied by CRTIC and adopted by TT&D, will train approximately 700 Resource Persons (one per primary school), will start next month, and by mid-1996 bring first-phase CRT training to all primary teachers.

There has been extensive in-house self-study in ERTD. Concepts are developed and detailed in several ERTD/ BEC papers. Long-term staff training can certainly be expected to have long-term pay-off. Three ERTD staff have or will receive Master's Degrees in Educational Measurement from the University of Pittsburgh. One ERTD staff member attended a six-month short course in Educational Measurement at Florida State University. Four ERTD staff made one-week study visits, two to the West African Examinations Council in Accra and two to the Kenya National Examinations Council in Nairobi.

CRT-based certification testing started with work on the PSLE. Test blueprints -- the most essential first step in CRT-based test construction, are nearly ready for CDD approvals. An item writing workshop produced approximately 950 potential PSLE test items for review and editing. Mrs Moahi, with strong backing from the USAID Project Manager and BEC's Chief of Party, has taken steps to insure that an entirely new computerized test scoring and reporting operation will be in place for the 1996 trial CRT-based PSLE. Computers, software, and production equipment that ERTD is receiving from BEC are welcomed and effectively used by staff who are very proficient in the use of word processing and graphics programs.

Dr Quansah listed twenty-five (25) sub-objectives in his revised workplan. These as discussed are shared ERTD/BEC objectives. Thirteen (13) will be completed by project close-out, three (3) are partially completed, four (4) have been postponed by ERTD's agenda, four (4) have to do with the work of the computer consultant, and one (1) was not started. This reflects substantial technical achievement. Twenty-five sub-objectives and their status at project close-out are listed on the next page.

If the BEC early close-out had not occurred, this report would quite properly be a mid-project formative evaluation. Given the evidence obtained for the assessment component, anyone would consider the amount and quality of work done by ERTD staff as exemplary. There is a downside, however. CRT is still a somewhat confusing concept to many teachers

and even teacher trainers. This should be expected , but it can slow the pace of CRT infusion if not dealt with. This is puzzling because the CRT concept is so simple:

- tests are built that contain items corresponding to important curriculum objectives;
- objectives are framed in terms of information needs of users;
- tests are scored so that the item-objective connections are retrievable for reporting;
- users of information are given reports that enable them to do their work better.

The item banking consultancy had little immediate pay-off but review of his report ERTD to refocus attention to next year's pressing computer processing and reporting needs. Dr Nitko's consultancy led to recommendations that did not come into immediate play but will later. The lesson to be learned is that the need for a consultancy must emerge from within the MOE, has to be translated into a specific scope of work prepared by the MOE, and that the consultant must address the specified need.

BEC/ERTD Student Assessment Objectives

Development of a CRT-Based Certification Testing Program

Objective 1.0: Norm-referenced PSLE replaced with criterion-referenced tests by 1996-97

- | | |
|---|------------------|
| 1.1 Develop CRT PSLE and JCE activity schedule | Partly completed |
| 1.2 Review manual of examinations administrative procedures | Completed |
| 1.3 Plan examining personnel records system | Completed |
| 1.4 Develop marker evaluation system | Completed |

Objective 2.0: Test blueprints for PSLE subjects developed.

- | | |
|---|------------------|
| 2.1 Select and develop uniform titles for learning behaviors to be used for diagnostic CRTs | Completed |
| 2.2 Develop test blueprints and test plans for PSLE subjects | Partly completed |

Objective 3.0: Performance standards for grade awards established

- | | |
|--|--------------------------|
| 3.1 Using established procedures for standard setting, establish the performance standards for grades A, B, C, D, for the PSLE | Postponed till late 1996 |
|--|--------------------------|

Objective 4.0: Validation mechanism established to link CRT tests to syllabus objectives

- | | |
|---|-------------------------|
| 4.1 Develop item banks from which tests will be generated | Postponed till mid 1996 |
| 4.2 Set up moderation teams to moderate and validate test items | Partly completed |

Objective 5.0: Mechanism in place to analyze results of CRT tests.

- | | |
|--|---------------------|
| 5.1 Determine types of statistics and other information to be generated through the scoring system | Computer consultant |
| 5.2 Determine the grading and reporting formats of the examination results | Computer consultant |
| 5.3 Plan acquisition and installation of software for CRT processing | Computer consultant |
| 5.4 Plan acquisition and installation of software for item banking and test generation | Computer |

consultant

Objective 6.0: Reports on CRT assessments prepared and reported to relevant stakeholders.

- | | |
|--|-------------------|
| 6.1 Determine the format and content of annual technical reports to be submitted by ERTD to subject panels | Completed/ongoing |
| 6.2 Update procedures for writing school reports on for distribution to teachers, TT&D | Completed/ongoing |

Development of a CRT-Based Teacher Training Program

Objective 1.0: In-service training programs developed to ensure that teachers in the field and other practitioners acquire skills in CRT-based testing and continuous assessment.

- | | |
|---|--------------------------|
| 1.1 Conduct trainers' workshops | Completed |
| 1.2 Supervise and update trainers conducting in-service workshops for teachers and MOE practitioners in CRT | Completed |
| 1.3 Supervise the training of Standard 5 teachers | Completed |
| 1.4 Supervise the training of primary headteachers | Completed |
| 1.5 Monitor the training of Resource Persons for the National Training Program | Postponed till
SEP 95 |
| 1.6 Plan and conduct CRT workshops for in-service trainers | Postponed till
JAN 96 |
| 1.7 Plan participant training for ERTD staff | Completed |
| 1.8 Plan Study Visits for ERTD staff | Completed |
| 1.9 Continue in-house training courses in measurement and technical report writing | Completed/ongoing |
| 1.10 Plan and conduct training of computerized item bank clerk | Not started |

CHAPTER 7. RECOMMENDATIONS

Curriculum Development

While recognizing that BEC will soon be relegated to history, the following recommendations are presented in the spirit of wishing to be constructive as the MOE and its constituent components, together continue their steady progress towards an ever-improving system of basic education.

1. Recommendation concerning the BEC-Goal of Basic Education: "To enhance the established system to plan, produce, disseminate and evaluate a relevant, improved quality, ten year basic education curriculum."

That the MOE use the occasion of preparing for National Development Plan 8 (NDP 8) and existing structures such as the Interdepartmental Task Force to review, and modify if appropriate, the strategic goal for basic education stated above which guided the BEC initiative, and that a long-term strategic plan directed toward the attainment of that goal be formulated which incorporates the following elements: (a) the establishment of strategic objectives; (b) a timeframe of five to ten years; (c) annual reviews and modifications of the strategic plan in light of new developments and feedback regarding the performance of the basic education system; (d)provisions for disseminating the plan to all stakeholder groups and receiving feedback.

2. Recommendation Concerning the Processes and Structures of Curriculum Development.

That the review, refinement and improvement of the curriculum development process be regarded as an on-going process and that these changes be recorded in periodic revised editions of the Curriculum Procedures Development Manual.

That the organizational structures and attitudes which have been fostered in recent years to facilitate intra/interdepartmental and interagency consultation, communication, cooperation and collaboration (the "four Cs") in order to produce a better basic education system continue to be developed and strengthened, using such techniques as:

- a. Making this vitally important subject a periodic agenda item for meetings of bodies involved in the basic education mission.
- b. Organizing workshops/retreats for the express purpose of exploring ways in which

greater realization of the "four Cs" can be achieved.

c. Conducting surveys/research to ascertain the extent to which the goals of the "four Cs" are permeating the system of basic education and to gain insights into needed action to address problems of consultation, communication, cooperation and collaboration.

d. Recognizing that as the "four Cs" are increasingly incorporated into the culture of organizations a fifth "C" appears- that of greater "commitment" to chosen courses of action.

3. Recommendations Concerning Research and Evaluation

a. That CDD, in collaboration with other relevant MOE departments, give high priority to the development of a comprehensive plan for the evaluation of curricula (both formative and summative) and that the plan include provisions for the systematic collection and analysis of such data as:

- (1) Student performance data.
- (2) Structures comments of teachers (trial and other teachers).
- (3) Classroom observations, including those of field education officers, CDD officers, teacher trainers (in-service and pre-service).
- (4) Action research by practitioners.
- (5) Commissioned studies and consultancies.
- (6) Research by college and university lecturers and graduate students.
- (7) The experience of educators in other countries.

b. That the CDD, in collaboration with other relevant MOE departments, research and monitor the availability of curriculum materials in schools and classrooms, and that if problems continue to persist, aggressively pursue solutions to this critical dilemma.(Note: Studies have shown marked correlations between the availability of instructional materials for students and their academic performance.)

c. That the proposed but unfunded study dealing with the history of basic education in Botswana since the first National Commission on Education (1977) be undertaken, if at all possible, to ascertain the "lessons learned" from this earlier era which might be instructive to the development of basic education under the Revised National Policy on Education.

d. That the CDD continue the use of consultants, as deemed necessary, to assist in the search for solutions to critical problems of curriculum and instructional materials development.

4. Recommendation concerning training (and staffing).

That a long-range staffing plan of recruitment, retention and training for the CDD be developed, taking into consideration the recommendations contained in the consultant report by Dr. Cream Wright (*Towards a Curriculum Policy for Basic Education in Botswana*) that the staffing pattern combine a limited number of high level permanent staff of curriculum professionals with subject specialists seconded to the division as and when needed. (Note: The

permanent staff should possess strengths in such areas as curriculum development, curriculum evaluation and materials production. Given the required level of technical and conceptual performance needed for the effective performance of certain MOE roles, consideration should be given to building a case for the modification of current government policy which precludes long-term post-Masters Degree studies.)

That in preparing the staffing plan, consideration be given to the establishment of a high-level curriculum specialist position (as opposed to subject specialist) in the CDD whose functions as an extension of the office of PEO would include, *inter alia*, the overall coordination of curriculum development and training throughout the Division, in-house training and advising of curriculum development officers, and the planning and coordination of training related to the implementation of new and revised curricula.

Preservice Teacher Training

Recommendations:

1. Provide increased instructional resources for the Teacher Training Colleges and the Education Centers.

The BEC project made a number of contribution to increased instructional resources for the Department of Teacher Training and Development, most of which were provided to upgrade the media and library capabilities of the Inservice Education Centers. A similar effort from local or other donor sources is needed at the teacher training institutions.

2. Institute formal institution-based staff development at teacher training colleges

The continued professional development of teachers (whether in schools, colleges, or universities) is what provides for the improvement of their techniques and the capacity of their educational institutions to improve. New policy for primary and secondary schools is moving Botswana in the direction of school-based inservice capabilities. The same institutionally driven staff development capacity needs to be provided for the TTCs and the CoEs. While it is occurring when national innovations are identified and, in addition, in many informal ways, the process needs to be recognized and formalized.

3. Increase staff at the Department of Teacher Training and Development with assignments in support of Preservice Teacher Training.

The staff supporting the modifications and revisions of Preservice programs, teacher training curriculum revisions, movement from certificate to diploma, training and upgrading of lecturers is woefully inadequate. To a certain extent, officers on study leave contributed to this and, having returned, will compensate somewhat. On the other hand, unfilled positions also exacerbated the problem. For whatever reason, the Department of Teacher Training and Development needs additional personnel to do well the job it is charged with doing.

4. Increase support for the Self-Study process in TT and D, the Ministry, and the University of Botswana.

The Self-Study process has been developed, used, and evaluated at each of the six teacher training institutions. The process, to be successful, as it was here, involves a lot of time, study, and effort by the lecturers and administration at a college. It is, of course, not a "one-shot" affair done once and never done again. To maintain the momentum it must be done periodically

every five, eight, or ten years. The second or third time the process is used at the same institution, the commitment to it by staff is dependent upon the response given during the previous efforts to recommendations for improvement forwarded to agencies outside the college. Dissatisfaction currently exists at the lecturer and staff level to instances where recommendations were ignored or discounted by the Ministry or the University. While it is clear that all such recommendations cannot be fulfilled, it is equally clear that college staff expects responses in return for the effort they expended. As the Self-Study process continues to develop, this aspect must be handled thoughtfully.

5. Involve University of Botswana professors in the national innovations and curricular changes taking place in the schools.

The successful efforts of the Ministry in obtaining collaboration, consultation, and communication between and among the departments (CD & E, ERTD, TT & D, Primary, Secondary, etc.) in the recent development efforts in response to the RNPE must be extended to include professors from the University of Botswana who are the primary trainers/ educators of the teacher trainers at the six teacher training institutions. Just as the teacher training colleges must revise its curriculum to support school improvements, the institution that trains the trainers of teacher adapt to the changing schools as it continues its programs.

Inservice Teacher Training

1. Obtain reports from Dr. D. K. LeCzel or have Inservice unit staff analyze her field notes and write up conclusions.

The Inservice Advisor's work style was very beneficial to her and to those with whom she worked while she was here. Data collected by team members verified her use of the acquired insights. She spent a lot of time working informally in the field -- at schools and Education Centers -- with teachers, headmasters, and training officers. She kept very good notes and used very good protocols and observation techniques during these visits. Her review of the status and activities in each of the Centers and her data collection from teachers and other school-based educators regarding the success of inservice training could provide useful conclusions for the continued improvement of inservice delivery. Unfortunately, she did not prepare reports nor formalize her analysis or conclusions. If such were available, they would be quite useful to education officers and inservice providers.

2. Develop inservice components that are responsive to teachers' problems and needs.

Data from field studies and feedback given to Center and regional inservice officers as well as Breakthrough teacher advisors indicate that teachers want and need assistance from an inservice component that responds to specific teacher problems. As the unit works to meet inservice needs, this felt need being voiced by the teachers themselves needs attention. A component does exist, one of three prongs of Education Center delivery -- national innovations, curricular improvements, and response to teacher needs, but given the MOE priorities, little, if any, time is available for it.

3. Develop a parallel data based management, monitoring and evaluation system to that being developed and networked by the Preservice Unit.

The development of a management, monitoring and evaluation system is clearly one area that simply needs time that the truncation of the project did not provide for. The department has the equipment, personnel with some training, plans to develop a system for data management and planning, and resources locally e.g. the Apple Center. The work of the unit has grown to such a level that data-based planning and management must be utilized to maintain its success level.

4. Increase staff at the Department of Teacher Training and Development with assignments in support of Inservice Teacher Training.

The staff supporting the modifications and revisions of Inservice program, designing and delivery training, responding to inservice needs of both Ministry departments and school personnel, and managing the process is woefully inadequate. To a certain extent, officers on study leave contributed to this and, having returned, will compensate somewhat. On the other hand, unfilled positions also exacerbated the problem. For whatever reason, the Department of Teacher Training and Development needs additional personnel to do well the job it is charged with doing.

5. Involve the University in attempts to provide distance learning and credit-bearing incentives for inservice teacher training.

The Department of Teacher Training and Development is to be commended for its initial efforts to pursue credit-bearing and distance education alternatives for the inservice training it provides. Work with institutions from the United Kingdom will certainly facilitate these moves. The reality, however, is that, ultimately, any system of this sort will only work if the University of Botswana is a committed participant in these efforts.

6. Extend the training and personnel development efforts within the Ministry of Education.

At present, a significant number of educators are playing roles other than that for which they have been trained -- lecturers and teachers are writing curriculum, lecturers are providing inservice training, educators of a variety of backgrounds are assisting in test construction, teachers are training other teachers, etc. The Ministry of Education needs to have an extensive in-house training capacity, housed within the inservice unit, that would be capable of assisting educators seconded or assigned temporarily to a new role who need training in the skills and behaviors of that role.

7. Monitor the quality of the training provided by the resource teachers.

One consistent characteristics of training programs that utilized the multiplier effect is the degradation of training as the process gets farther from the original training developers. This is especially critical at the lowest level -- the training received by teachers who have been trained by resource teachers who have been trained by a training cadre who have been trained by . . . It is typical that the specificity and quality of training lessens as one goes down this cascade. The Department of TT & D, with help from CRTIC, needs to institute a process for monitoring the quality of training delivered by resource teachers.

Student Assessment

1. ERTD should work with CDD staff to collaboratively develop formative evaluation plans related to the use of test results for curriculum improvements.

Evaluation plans must go beyond an examination of only test results. Any evaluation plan should consider processes, products, and effects. Test results are concerned with learning effects. The whole plan would also evaluate curriculum products like teacher's guides, the syllabus, and student materials. The whole plan would also evaluate processes such as training, supervision, implementation, and monitoring.

2. ERTD should work with TT&D staff to develop formative evaluation plans related to the use of test results for upgrading the training of Resource Persons in the schools

Upgrading the training of Resource Persons will probably be needed for a considerable period. They are pivotal change agents in the development of a continuous assessment model. Training materials will be needed. To insure that teachers adequately assess their students and that their assessments have content validity with respect to the curriculum, ERTD will need to develop a strong working relationship with TT&D.

3. Once the specifications are prepared, ERTD should take follow-up steps to develop computer scoring and reporting programs for the 1996 CRT-based trial PSLE.

Dr Johnson will be able to fly to Botswana under BEC contract to produce software specifications for scoring and reporting of the 1996 CRT-based PSLE. Specifications do not process test papers. Programs do, so ERTD should, after reviewing specifications together with Dr Johnson and staff of the Government Computer Bureau, develop plans to write the scoring and reporting programs, and organize and supervise processing of the 1996 PSLE papers. Training of staff needs to be also planned.

4. ERTD should move quickly in developing the 1996 CRT-based trial PSLE so that serious planning for the development of the CRT-based JCE can start.

PSLE test blueprints are nearly ready and there are a sufficient number of items to assemble item tryout forms for the 1996 PSLE tests. Item tryout is needed because the item analysis for a CRT test answers different questions than those which have been traditionally asked before. Items at known difficulty levels in last year's PSLE should be included with new tryout items

to calibrate new items and old items on Rasch scales; it is important that the 1996 PSLE not be detectably harder or easier than earlier PSLEs. Select items also according to judgments about item-objective congruence determined by ERTD and CDD, according to judgments about item-teaching congruence determined by ERTD, CDD, and TT&D, and follow this up with standard setting exercises. The 1996 PSLE test papers should be set as quickly as possible. Remember that "the perfect is enemy of the good." A good 1996 PSLE is probably good enough. Score the 1996 tests and T-score process as usual. Also report according to new CRT programs. Conduct Rasch item analyses for 1996 PSLE test subjects.

5. ERTD should plan to carefully reconsider Anthony Nitko's recommendations related to the development of a CRT-based Junior Certificate Examination.

Once the primary schools and teachers catch on to the advantages they can obtain from the CRT-based PSLE, Junior Secondary Schools teachers may ask for the same. Making small mistakes with the "low stakes" PSLE is not critical. It is important to get the JCE right the first time. The JCE will be a "high stakes" examination for some time to come.

6. Relevant and user-targetted reporting is a critical and valued CRT output. Begin soon to work with CDD and TT&D to design possible reporting formats.

Reporting must be addressed when scoring programs are written. The time to think about report formats is when specifications for scoring programs are being developed. ERTD needs considerable flexibility in adding to or adjusting report formats from year to year. CDD and TT&D must express their wants. This matter should be discussed with Dr Johnson. Refer to Nitko's JSEIP report Sustaining Criterion-Referenced Tests in Botswana. Appendix B.

7. Explore the use of different dimensions other than Bloom et al. for different subjects.

Different subject focus on various kinds of learning and various kinds of skills. Curriculum Officers are closest to the ways different subjects are organized. Many persons find the Bloom taxonomy difficult to apply. However, if it is acceptable and people feel comfortable with it, this recommendation can be scrapped.

Appendix A: Interviews Conducted and Discussions Held

USAID

Howard Handler, USAID Mission Director
Ed Hantel, USAID Project Manager
Neil Billig, USAID Acting PDO

BEC Staff

D. Benedetti, BEC Close-Out Coordinator
J. Odharo, BEC Preservice Advisor
K. Quansah, BEC Educational Measurement Advisor
J. Reece, BEC Curriculum Coordinator
B. Vogeli, BEC Instrucional Materials Development Advisor

Ministry of Education

Mr. Peter Molosi, Permanent Secretary, MOE
T. Mogami, Deputy Permanent Secretary
N. Lecoge, Chief Education Officer, CD&E
M. Mogasha, Chief Education Officer, Primary
M. Mawela, Chief Education Officer, Secondary
M. K. Mogasha, Director, Department of Primary Education

Curriculum Development Division

F. Leburu-Sianga, Principal Education Officer/CDD
N. Koolese, CDD Curriculum Evaluator
J. Chengeta, Agriculture Officer
A. Mazebedi, Agriculture Officer
E. Baakile, Art Officer
M. Opira-Poria, Art Officer
T. King, English Officer
N. Ratsoma, Setswana Officer
S. Mothei, Setswana Officer
S. Makgothi, Science Officer
N. Brown, Science Officer
M. Chawangwa, Science Officer
L. Mpotookwane, Special Projects Officer
B. Bogosing, Religious Education Officer
M. Ramokhua, Music Officer

Examinations, Research and Testing Division

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L. Charakupa, Registrar of Examinations
W. Davids, Senior Research Testing Officer
J. Gaobakwe, Senior Research Testing Officer
T. Mmualefe, Research Testing Officer
M. Keitheile, Research Testing Officer

Colleges of Education

L. Matshaba, MCOE Principal
R. Omara, Molepolole COE Department Head
B. Masasa, Molepolole COE Lecturer, Chemistry
O. Kereteletswe, Molepolole COE Lecturer, Mathematics
M. Chewe, TCOE Principal
J. Matthiessen, Tlokweng COE Principal
Diane Masogo, Tlokweng COE Head of Department
B. Bimbo, Tlokweng COE Lecturer
S. Nthobatsang, Tlokweng COE Lecturer, Social Studies
B. Modongo, Deputy Principal, Tonota College of Education
A. Molwane, Acting Assistant Principal, Tonota COE
P. Galardy, Lecturer, Physical Education, Tonota COE
M. Mwandila, Lecturer, Agriculture, Tonota COE

Primary Teacher Training Colleges

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A. R. Mothibi, Principal, Lobatse TTC
N. Moncho, Principal, Francistown Teacher Training College (FTTC)
W. P. Ramokate, Deputy Principal, FTTC
P. Slave, Head of English Department, FTTC

Teacher Training and Development Department

K. Motlotle, PEO/Inservice, TT & D
C. Malongwe, SEO (Practical Subjects)
R. Mphahudi, SEO (Participant Training)
S. Sefhako, SEO (Assessment)
B. Kgogwe, Maths/Science Inservice Education Officer, Gaborone Region
D. Rantabe, Preservice
M. Kgotla, Inservice
G. Jansvold, Breakthrough Coordinator

M. Habangaan, Physical Education Officer
M. Lethlare, Physical Education Officer
J. Appiah, Business Studies Officer
K. Dadygesah, Business Studies Officer
M. Vencatachellopathee, Design and Technology Officer
D. Khame, Mathematics Officer
O. Setlhare, Mathematics Officer
D. Ratsatsi, Media Officer
L. Kgathi, EO, Guidance and Counseling Department
K. Molefi, EO, Guidance and Counseling Department

Educational Centres

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G. Mmusi, Senior Education Officer, Molepolole Education Center

L. Matshemako, Senior Education Officer, Molepolole Education Center

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F. Mautle, University of Botswana

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A. Hopkin, Senior Lecturer, University of Botswana

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